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Fat	3·5	Fat	3·8
Casein	3·0	Casein	1·0
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Milk Sugar	4·5	Milk Sugar	6·2
Bacteria	very numerous	Bacteria	absent

Thus cow's milk contains an excess of casein which curdles in the infant's stomach, and a deficiency in soluble albumen and sugar. Condensed milk, on the other hand, contains an excess of sugar, but a decided deficiency in fat and soluble albumen, and a slight deficiency in casein. We have therefore endeavoured successfully to produce two complete Foods which are, physiologically, practically the same as the mother's milk. These are

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See also Pages ii, iii, 427 and 443.

The "Allenburys" Throat Pastilles,

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No. 11—Chlorate of Potash, 1 grain in each.
,, 32—Red Gum and Chlorate of Potash (Gum: Rubr: gr: ii, Pot: Chlor: gr: i.).
,, 14—Tannin, 1 grain.
,, 29—Rhatany and Cocaine (Ext: Kramer: gr: ii, Cocain: gr: 1-10th).

For Overstrain of Throat involving Relaxation.

No. 38—Chlorate of Potash, Borax and Cocaine (Pot: Chlor: et Boracis ää. gr: i. Cocain: gr: 1-20th).
,, 47—Alum and Tannin (ää. gr: i.).
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,, 24—Cocaine, 1-10th and 1-20th grain.
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,, 15—Carbolic Acid, ½ grain.
,, 41—Eucalyptus Oil.
,, 30—Boracic Acid, 1 grain.
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,, 36—Pumilio Pine, 1 minim.

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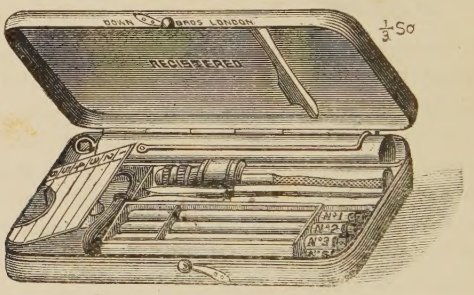

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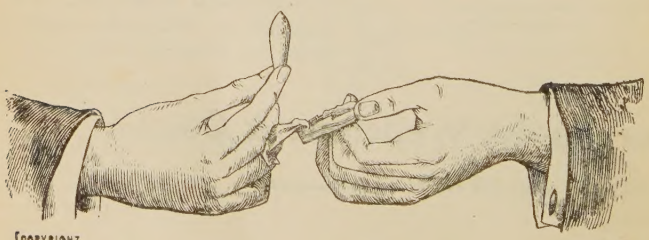

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59th YEAR OF PUBLICATION.

THE RETROSPECT OF MEDICINE, JANUARY, 1899.

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Braithwaite's Retrospect. January, 1899.

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ASSISTED BY

E. F. TREVELYAN, M.D. LOND., B.SC., M.R.C.P.,

ASSISTANT PHYSICIAN TO THE LEEDS GENERAL INFIRMARY, PROFESSOR OF PATHOLOGY, YORKSHIRE COLLEGE, LEEDS.

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Synopsis.

ABSTRACTS AND OTHER SHORT ARTICLES FROM THE MEDICAL JOURNALS, SHOWING THE MOST IMPORTANT INDICATIONS OF TREATMENT, PUBLISHED BY DIFFERENT WRITERS DURING THE HALF YEAR.

ARRANGED ALPHABETICALLY.

GENERAL MEDICINE AND THERAPEUTICS.

AIR, TREATMENT WITH SUPER-HEATED.

Reed (*Philadelphia Polyclinic*, August 6, 1898) gives some of the results obtained in a year's use of the Sprague hot-air therapeutic apparatus. Not only were patients benefited who suffered from rheumatism and gout, but the success of this treatment in bronchial and asthmatic difficulties, in tonsillitis, conjunctivitis, and many nerve troubles was abundantly demonstrated. Hot air proved itself a sovereign remedy for sprains, bruises, and synovial effusions. In gout, even if tophi have formed, they may still sometimes be softened and discharged through the excretory organs, as the skin and kidneys are stimulated by the hot blood, and circulation is restored to the affected part. Sleep returns to the sleepless, and the general economy is rejuvenated. Sciatica of some months' standing, lumbago, and torticollis were sometimes cured in one application, as were lobar pneumonia and pleurisy. Rheumatoid arthritis was treated with varying success. The soreness and general symptoms were generally relieved, but often the stiffness of the joints remained in spite of repeated applications. In all cases where persistent efforts were made the progress of the disease was checked. Altogether Reed had at his command records of 1,400 applications of high degrees of heat, in a great variety of affections, and from the study of these cases he is well satisfied that the use of super-heated air is capable of a wide application in medicine, and will help in the better understanding of lithemic affections. When the nature of the malady was such that the body of the patient was placed in the apparatus, the heat employed was from 250° to 260° F. If the arm or leg was placed in the cylinder, the air baths were often given a temperature of from 300° to 350° F. Any apparatus which will not give as high a temperature as this must be of limited service. (Medical News, September 17, 1898.)

ANÆMIA OF INFANCY.

Before the American Pediatric Society, Dr. Lovett Morse proposed the following classification of anæmia :—(1) *Secondary*—(*a*) Mild anæmia ; (*b*) mild anæmia with leucocytosis ; (*c*) severe anæmia ; (*d*) severe anæmia with leucocytosis. (2) *Primary*—(*a*) Pernicious ; (*b*) leukæmia. He regarded the case he reported as an example of severe secondary anæmia with leucocytosis. The cause of the anæmia was undoubtedly to be sought in the general malnutrition resulting from improper food. The case presented a splenic enlargement, but that this was not an essential feature of the case was shown by the fact that it became smaller as the case progressed, probably finally disappearing entirely. Dr. Jacobi, after a brief review of the report, thought if it were not for the poikilocytosis in the case he would have called it a case of Hodgkins' disease, but the poikilocytosis characterised it as a pernicious anæmia. Dr. Morse, in closing the discussion, thought that in the light of our knowledge of the different forms of white corpuscles shown by differential staining, it was too late to speak relatively of the proportions of white and red in making the diagnosis of leucocytosis and leukæmia. The number of red blood corpuscles depends on one factor, and the number of white blood corpuscles on another. The points corresponding to pernicious anæmia were the large number of white blood corpuscles and the reduced amount of hæmaglobin. The presence of irregular poikilocytosis in the blood of children was not of as much diagnostic value as in adults. (Pediatrics, July 1, 1898.)

ANTIFEBRIN.—Unusual Symptoms after.

Dr. P. V. Ballou (*Medical News*, June 18, 1898) records a case of a man, aged 45, suffering from a form of intermittent fever. The patient complained of almost unbearable headache ; pulse, 120 ; respirations, 23 ; temperature, 104·8° F. Ten grains of antifebrin were given, and about twenty minutes later the patient said his headache was relieved and that he felt easier than at any time since the previous evening. About forty-five minutes after the drug was administered all sweating ceased, and a peculiar sensation of warmth under the skin was complained of. To this, in twelve or fifteen minutes, was added intense itching, while in three or four more minutes the whole body presented a general erythematous condition. The entire surface was of a brighter red than that of a typical case of scarlet fever, and, like the scarlatina rash, it disappeared on pressure, to return as soon as pressure was removed. No part of the body was exempt from this rash, the conjunctivæ, palms of the hands, and soles of the feet being as red as any part of the body. The temperature of the surface seemed elevated,

but the thermometer in the mouth showed that it was gradually falling. The body appeared as if every superficial capillary was dilated, and an increased quantity of blood was rapidly flowing through each. With the appearance of the rash the itching became more intense, the patient assuming all positions possible while scratching. Within the external ear the itching was especially intense, but there was no disturbance of hearing. The rash lasted for six hours, without any apparent change, and then disappeared rapidly from all parts of the body simultaneously, and as the rash faded the itching subsided. About the time the rash disappeared a slight cardiac irregularity became evident, and this lasted for four days. The only drug taken before the antifebrin was a single dose of calomel (about 5 grains). (Medical Chronicle, July, 1898.)

ANTITOXIC SERUM ADMINISTERED BY THE RECTUM.

Briefly, Dr. J. E. O'Connor thinks, the advantages of rectal over hypodermic serotherapy appear to be as follows:—(1) It can be employed in almost all cases without fear of prejudicial interference. (2) Solid serums can be conveniently used. (3) It is expeditious and simple. (4) The absorbed serum is purer. He also administered anti-streptococcic serum per rectum with gratifying result in a case of scarlet fever. The method appears to be deserving of trial, and possibly some enterprising firm may supply solid serums in the form of suppositories. (From abstract in the New York Medical Journal, October 15, 1898.)

ANYTIN AND ANYTOL.

Loeffler (*Therap. Monatshefte*, July, 1898) describes the properties and uses of anytin, a new chemical compound containing carbonic acid, oxygen, and hydrogen, 16·5 per cent. of sulphur, and 4·5 per cent. of ammonia. It is a brownish-black, very hygroscopic powder, making a clear solution in water in all proportions. It is precipitated from its solution in water by solutions of an alkali, similarly to the formation of soaps. Its chief value lies in its power to make soluble in water substances which are ordinarily not so. Hence many substances which have had as disinfectants only a limited value, can be used in much stronger solutions than heretofore, and so made more effective. Anytin itself is not a strong disinfectant. It has not been found to contain living germs, but spores of different kinds may remain in it without losing their vitality. A 1 per cent. creasol-anytol solution has the disinfectant worth of a 3 per cent. carbolic one. All spores were destroyed in thirty-six hours in a 10 per cent. creasol-anytol solution, whereas a 5 per cent. carbolic solution requires sometimes as

many as sixty hours to destroy anthrax bacilli. For the preparation of catgut he recommended that the gut be allowed to remain in a 10 per cent. solution for thirty-six or forty-eight hours and then preserved in alcohol. In this manner the gut was not injured in the least, although a week's soaking materially lessened its strength. A 3 per cent. solution has very little effect upon the skin, and a 10 per cent. solution none at all. Tampons saturated with a 1 per cent. or 2 per cent. solution, and introduced into the nostrils and kept there for three or four hours, sufficed to limit the formation of crusts, and removed almost entirely the disagreeable odour of ozena. A 3 per cent. solution is recommended in the local treatment of diphtheria. (Medical News, October 8, 1898.)

APOMORPHINE.

In bronchial asthma apomorphine affords almost instant relief when the attack has come on and the patient sits at an open window gasping for breath, with a feeling of constriction over the entire chest. It acts in this instance by the relaxing effect, and takes the place of morphine and other narcotics, which are so dreaded because of the habit often acquired; I am yet to hear of the apomorphine habit. Few asthmatic patients go through life without acquiring the morphine habit, and I wish to lay great stress upon the use of apomorphine in this disease. In catarrhal laryngitis, especially the severe form, the use of apomorphine in small doses will often save the life of the little patient, and it does this by its relaxing property and also its effect upon the mucous membranes, loosening the secretion and subsequently causes vomiting of the same. In all forms of bronchitis in which the cough is dry and secretion scanty, apomorphine is an excellent addition to the expectorant mixtures, and especially in pneumonia it takes the place of alkalies to free the secretion. In poisoning of any kind, when we desire to rid the stomach instantly of its contents, nothing can take the place of a hypodermic of apomorphine given subcutaneously. It should certainly take the place of all other emetics, and push ipecac, tartar emetic, mustard, &c., to the background. (From Dr. Visanska's paper in the Medical Record, July 2, 1898.)

Apomorphine.

Dr. Robert H. Babcock (*American Medico-Surgical Bulletin*, June 10) says that patients can tolerate very much larger doses than is commonly supposed, and by the mouth as much as two grains at a single dose may be given without nauseating. It is more apt to cause emesis when taken in the morning before breakfast. The combination of a small dose of apomorphine,

however, with other nauseating expectorants increases their efficacy. Dr. Babcock says that its effects are so satisfactory and it is so easily administered in pill or capsule, when for any reason it is not desirable to prescribe a syrup, that it has become his favourite remedy and main reliance in the treatment of both acute and chronic bronchitis. Combined with codeine or morphine, troublesome cough can be allayed without at the same time arresting bronchial secretion; indeed, the sputum will be increased, while at the same time the cough is moderated in violence and frequency. The author's usual dose, administered by the mouth, appears to be about a fifth or a quarter of a grain, up to one-half, and sometimes to one grain, every three or four hours. In the case of a nursing baby a sixtieth of a grain every four hours in syrup of wild cherry bark was given with great effect in constant dry cough. The author calls special attention to the necessity of obtaining pure apomorphine (and recommends Merck's), as he has seen the soporific and other effects of morphine induced by impure specimens. It must not be prescribed in mixture with potassium iodide. (New York Medical Journal, July 2, 1898.)

BERI-BERI, PROPHYLAXIS IN.

Careful attention should be paid to hygiene in beri-beri districts. The dwellings should be dry and well ventilated, built high above ground and not overcrowded, especially in the sleeping quarters. In ships manned by native crews, care should be taken to keep the forecastle dry, clean and well ventilated. Overcrowding and overheating is to be avoided. Wet clothing should not be hung up to dry in the sleeping quarters, and the men should be kept on deck as much as possible. The diet should be generous and varied. Wheat and barley should be largely substituted for rice. When a case has been discovered in a gaol, mine or on board a ship, prompt measures should be taken to prevent its spread. Every person should be examined for the symptoms of the disease—œdema, patellar reflex, muscular hyperæsthesia—and all suspicious cases be promptly removed. When a case has occurred on board a ship there should be a thorough fumigation, the quarters scrubbed, ventilated and whitewashed, and, if practicable, the men should be sent elsewhere to sleep. In all cases the dietary should be looked into and supplemented, if found to be insufficient. (From Dr. Norton's paper, Indian Lancet, June 16, 1898.)

BISMUTH SUBGALLATE.

Dr. Faukhauser's results agree perfectly with those of Perlmutter. He has found it an excellent remedy in phthisical diarrhœa, and in acute serous diarrhœa of an inflammatory nature. In the

former cases he administers 15-grain doses three times a day, in cachets, followed by a good swallow of water. In the acute diarrhœas the same quantity is given every two hours until its effects become manifest, when the remedy is discontinued. As a rule it does its work in a few hours, and rarely are more than three doses required. In cases of severe pain or tenesmus, the writer gives with the bismuth subgallate, 1 or $1\frac{1}{2}$ grain of powdered opium. Bismuth subgallate is undoubtedly a powerful intestinal siccative, in consequence of which it should not be administered, in acute cases, after it has reduced the frequency of the movements and altered their consistence; its action will continue for some hours after the discontinuance of the medication. As a disinfectant in infectious diarrhœa it is inferior to many other remedies; but as a simple astringent in phthisical diarrhœa and in acute gastro-intestinal disturbances attended with profuse serous discharges, the writer has found bismuth subgallate one of the best remedies at the disposal of the physician. (From Dr. Faukhauser's paper in the Journal of the American Medical Association, October 1, 1898.)

CALF LYMPH, DANGERS OF GLYCERINATED.

With a view to testing the effect of prolonged storage (Dr. Symes, British Medical Journal), a supply of lymph was secured, the dates on which they were taken were ascertained, and plate cultures were made, Specimen 1, stored 199 days, developed one colony of micrococcus tetragenes only. Specimen 2, stored 184 days, 2 colonies of bacilli, 1 of staphylococci. Specimen 3, stored 144 days, 2 colonies of staphylococcus, 1 of micrococcus tetragenes. Specimen 4, stored 74 days, 1 colony of bacilli and 2 of penicilium. Although in no case was the lymph sterile, yet the effect of prolonged storage was materially to reduce the number of extraneous micro-organisms present. The efficiency of the lymph was in no way impaired, a child vaccinated from lymph No. 3 developing perfect vesicles around which little inflammatory areola developed. To ensure the greater purity of their lymph and increased safety in vaccination, Dr. Symes says that medical practitioners should either store the material themselves for a period of one or two months, or should insist, when purchasing tubes, that the date on which the lymph was taken be stated. In addition, the supply should from time to time be submitted to bacteriological examination in order to test the efficiency of the precautions taken. (Medical Times and Gazette, September 17, 1898).

CANNABINOL.

Therapeutically, cannabinol (prepared from cannabis indica) is likely to be a valuable hypnotic. It is purer and more reliable

than the cannabis preparations on the market, but it does not appear to possess any other advantages over them. It is not a powerful cerebral depressant (except in relation to its dose), and belongs rather to the substances termed "sleep producers" than "sleep forcers." Owing to its comparative insolubility its action is prolonged, and this in my own case leads to depression. Its advantages are, that its lethal dose is considerable; it does not inhibit secretory activity; and it does not readily induce habituation. Its disadvantages are, the excitement produced by early doses and the depression which follows its use. It appears to be a slight analgesic, but how far its activity goes in this direction it is impossible, in the absence of experiments in which pain is present, to say. This can only be proved by clinical observation. Purely pharmacologic investigations do not support any other actions of this drug, but so far as they have been carried they do not deny their existence. (From Dr. C. R. Marshall's paper in the Journal of the American Medical Association, October 15, 1898.)

CRETINISM FOLLOWING ACUTE THYROIDITIS.

The child, aged 10 months, is one of a family of four children. The other children were of normal size and development. The parents are normal in size and development. The child was well and normally developed until 10 months of age, when she had an attack of acute thyroiditis. The attack lasted about a week; it was accompanied by fever, swelling of the thyreoid, and symptoms of pressure on the trachea. The throat was normal in appearance on the inside. There was no abscess formation; the swelling and fever disappeared, with complete atrophy of the thyroid. The child's growth and development ceased immediately after this attack, and she developed the usual appearance of a typical cretin. She is now 7 years of age. She is thirty-three inches high and weighs thirty-three pounds. The intellectual condition is not developed; she says only a very few simple words. About eighteen months ago I treated her for a short time with thyroid extract with marked improvement. Her skin and hair became more normal, the tongue protruded less, and the child looked brighter. (From Dr. Edmund Shield's paper in the New York Medical Journal, October 1, 1898.)

CYSTICERCUS CELLULOSÆ.—Detection of.

The *modus operandi* is extremely simple. A small quantity of any well-known pepsine preparation is added to a ·5 per cent. solution of HCl, and to this a sufficiency of the suspected article is mixed in the proportion of 1 to 8. After standing for several hours in a water bath at 40° C., we find that the

muscle, fat, &c., has been digested, whilst the cysticerci, if present, are deposited at the bottom of the flask as small round white bodies. Unfortunately, this method, although thoroughly efficient and reliable, lacks rapidity in execution. This difficulty, however, would appear to have been removed by Kissling, who recommends that the acet. of soda or potash be dissolved in sufficient quantity to yield a solution with a specific gravity of 1·15. The suspected material and a small quantity of this solution are thoroughly mixed together in a conical test-glass of from one to four litres capacity till the whole has attained the consistency of thick soup. A large amount of the lye is now added, and the whole stirred, when, should the heads of these tænia be present they will separate out, and by reason of their greater specific gravity fall to the bottom, where they may be easily recovered and their identity established by microscopic examination. The tænia solium is more frequently seen in butchers, sausage makers, &c. This, no doubt, is largely due to the filthy habit the majority have acquired of holding the knife between the teeth whilst dressing or cutting up a carcase. Fortunately, the vitality of the cysticercus is destroyed when exposed to a comparatively low temperature. Numerous experiments have demonstrated that although death occurs exceptionally at 40° C., it is not till a temperature of 47° or 48° has been attained that their destruction is at all certain. Exceptionally they live at 49°, and even 50°, but they cannot survive the latter temperature if prolonged for one minute. Thorough cooking only can be relied on to cause their death. Measly flesh moderately cooked may be still capable of producing this tænia when ingested, but it is more especially with underdone meat that there is danger. (From Mr. Trotter's paper in the Glasgow Medical Journal, June, 1898.)

DIABETES, FATS IN.

The importance of fats is seen first from the fact that they are the form of food best assimilated by the diabetic patient. Nearly all the sugar and starch given leaves the body unused, and for every 100 grammes of albumin, there is the possibility of 45 grammes of sugar appearing in the urine, whereas from fat, little, if any, sugar is formed. But this is not all, and herein lies another great advantage in fats. Each gramme of fat is capable of furnishing nine calories on being oxodised by the natural processes of the body metabolism, whereas a gramme of proteid matter yields but four calories, even allowing that none of it is converted into sugar. These are facts, and on these facts a rational treatment of diabetes must rest. (From a leading article in the Boston Medical and Surgical Journal, August 18, 1898.)

DIABETES.—The Dangerous Factors in.

(M. Deléage (de Vichy), *Gaz. des Hôp.*, No. 53, 1898.) The author concludes from the observation of 300 cases, that the gravity of the disease is not proportional to the quantity of glycosuria, but is especially influenced by age, state of nutrition and digestion, condition of liver, kidneys and nervous system. As regards the liver, it is hypertrophied in two-thirds of the stout, often alcoholic, diabetics. There is no danger in that so long as the hepatic cells can cope with the increased activity. But it may end in cirrhosis, which then becomes the chief trouble, such a condition being especially likely where there is excessive abuse of alcohol, arsenic or rich fatty food. Neither alcohol, arsenic nor fatty foods should be administered even in moderate quantities to diabetics except where there is tubercular disease. The kidneys become a source of danger as soon as they cannot eliminate freely; toxæmia is then superadded to acetonæmia. A small quantity of albumin may be present for a long time without any serious results. Any digestive disturbance producing failure of assimilation is serious. With regard to the nervous system, the author believes that the condition of the knee jerks, without other nervous complications, has no prognostic value one way or the other. (Abstract in Quarterly Medical Journal, October, 1898.)

DIABETIC COMA SUCCESSFULLY TREATED BY SALINE TRANSFUSION.

It is the general experience of those who have had to treat diabetic coma by saline transfusion that while consciousness may be restored this is of short duration, for the individual after a few hours lapses back into coma, from which a second saline injection fails to arouse him. In the following case the patient has remained perfectly intelligent during the twenty-eight days which have elapsed since the transfusion. A man, aged 30 years, who was previously in the Newcastle Infirmary suffering from diabetes, was found in a railway carriage at Tynemouth, in a state of unconsciousness and on a different line of railway from that by which he should have travelled. Dr. Rowell, the house physician, recognising the patient who had left the infirmary only a few hours previously, and finding him comatose, at once transfused him with two and a half pints of saline solution, passing it slowly into the right median basilic vein, and also freely purged him. The saline solution was composed of one drachm of chloride of sodium to one pint of boiled distilled water, the temperature of which was reduced to 112° F. During the operation the patient became sufficiently revived to complain that he felt pain. Before the transfusion

his pulse was beating at the rate of 45. By degrees consciousness was regained, and has since been retained. For the first three days after the transfusion a very small quantity of urine was passed daily—only 21 oz., instead of from 140 to 200 ounces when he was first in the infirmary. (From Dr. Oliver's paper in The Lancet, August 13, 1898.)

DIPHTHERIA IN LONDON.

The following are Dr. F. A. Dixey's conclusions:—(1) The amount of diphtheria present in London is still high, but is now diminishing after a temporary exacerbation in 1896. (2) The experience of the last two years has disclosed nothing exceptional with regard to the seasonal relations of diphtheria. (3) The interruption to the usual course of diphtheria mortality coincident with the two chief school holiday periods is again apparent in both 1896 and 1897. The new evidence, like the old, tends to show, that school-infection is an important, though not the sole, factor in the spread of diphtheria. (4) A considerable, but yearly diminishing, number of cases of true diphtheria are still returned as "croup." (5) A marked diminution in the case-mortality of diphtheria set in at the end of 1894, and has continued uninterruptedly up to the present time. This diminution is coincident with the employment of the treatment by antitoxin serum. (Medical Press and Circular, October 12, 1898.)

DIPHTHERIA, INTUBATION IN.

McClanahan, of Omaha, gives the following indications for intubation in diphtheria. He believes that the majority of cases of diphtheria recognised early are amenable to treatment with antitoxin. A certain number fail to respond to this treatment. In these cases, if at the end of the twenty-four hours a study of the symptoms leads to the conclusion that the patient is no better, intubation should be practised. The operation should be performed in all cases presenting any one of the following symptoms prominently:—(1) Deep epigastric recession with each inspiration; (2) laboured and prolonged expiration; (3) extreme restlessness; (4) spasmodic attacks coming on at intervals; (5) persistent cyanosis. In cases seen late, it might be wiser to intubate and administer antitoxin, rather than administer antitoxin and wait for its effects before intubation. (Dr. Yearsley's abstract in Treatment, October 27, 1898.)

DIPHTHERIA OF THE VULVA.

Williams (*American Journal of Obstetrics*, August, 1898) details the particulars of the following case of diphtheria of the vulva,

seen by him in consultation in March, 1897:—Mrs. K., German, aged 20, II.-para. Labour, February 20, 1897. Puerperium until twelfth day quite uneventful. On the twelfth day she experienced pain and a sense of swelling about the vulva. On the fourteenth day her physician was called in. He did not then make an examination. On the following day, being unable to urinate, she was catheterised by the physician, who noticed that besides being much swollen the vulva was covered with a greyish-white exudate. Her condition remained much the same during the following week, there being some fever and a somewhat rapid pulse. During this week both her children died from diphtheria, which caused the physician to suspect that the vulval exudate was also diphtheritic. Williams was accordingly asked to see the patient on the twenty-third day of the puerperium. The temperature was then normal and the pulse 100. The entire surface of both labia majora and minora was covered by a greyish-white, firmly-adherent membrane, one to one and a half millimetres thick, which was densely adherent, and left a raw, bleeding surface when removed. On introducing a speculum the membrane was seen to extend only a short distance up the vagina. There was no membrane in the throat. From cover slips made from the membrane on the inner surface of the labia minora, and from growth on blood serum, the typical Klebs-Löffler bacillus was demonstrated in pure culture. The antitoxin was used, and the patient rapidly recovered. A few weeks later there was some paralysis of both legs, and this gradually improved under appropriate treatment. From the statements of the physician in charge it would seem that he himself had conveyed the infection, seeing that he had several cases of malignant diphtheria under his care when he attended the labour. He had carefully disinfected his hands with bichloride before making the examination. Williams' conclusions are:—(1) That bacteriological examination is necessary not only to distinguish between the true and pseudo-diphtheritic membranes, but also to determine the proper mode of treatment. (2) That a physician exposes his patients to danger when he attempts to attend obstetrical and diphtheritic cases at the same time, no matter how carefully he may attempt to disinfect his hands. (From abstract in the Medical Chronicle, October, 1898.)

DISINFECTION.

Martin (*Presse Medicale*, 1898, No. 64) points out the following as the conditions of practical efficient disinfection:—(1) Certain and rapid destruction of pathogenic organisms; (2) relative harmlessness of the substance used both for the occupants and the furniture, &c.; (3) cheapness and ease of application;

(4) as far as possible, absence of disagreeable smell. The gaseous disinfectants, according to M. Martin, cannot be recommended. Sulphurous acid, if used efficiently, requires a long time—twelve hours for the actual disinfection, and at least twenty-four hours more before the room can be used. Formic aldehyde has great germicidal power, but no method has as yet been devised to make it sufficiently penetrating. Moreover, twenty-four hours' exposure to this vapour is necessary, and the room cannot be occupied for some days later. Thus neither of these methods of disinfection are practicable in the cases we are considering. The method chiefly followed in Paris is that of spraying with a solution of corrosive sublimate and common salt. This, if carefully and methodically done, and repeated after an interval of some minutes, causes such a thorough wetting and impregnation of the walls and roof as to produce in a few hours a disinfection as complete as can be obtained in a much longer time by gaseous disinfection. Moreover, this thorough spray of the room and its furniture, requiring such a movement of the contents of the room, ensures at least at this time that it is washed out. (From abstract in Edinburgh Medical Journal, November, 1898.)

DISINFECTION OF ROOMS WITH FORMALIN.

The following general directions for the disinfection of rooms may be of value:—(1) All cracks or openings in the plaster or in the floor or about the door and windows should be caulked tight with cotton or with strips of cloth. (2) The linen, quilts, blankets, carpets, &c., should be stretched out on a line in order to expose as much surface to the disinfectant as possible. They should not be thrown into a heap. Books should be suspended by their covers so that the pages are all open and freely exposed. (3) The walls and floor of the room and the articles contained in it should be thoroughly sprayed with water. If masses of matter or sputum are dried down on the floor they should be soaked with water and loosened. No vessel of water should, however, be allowed to remain in the room. (4) One hundred and fifty centimetres (5 ounces) of the commercial 40 per cent. solution of formalin for each 1,000 cubic feet of space should be placed in the distilling apparatus and as rapidly distilled as possible. The keyhole and spaces about the door should then be packed with cotton or cloth. (5) The room thus treated should remain closed at least ten hours. If there is much leakage of gas into the surrounding rooms a second or third injection of formaldehyde at intervals of two or three hours should be made. (From Drs. Novy and Waite's paper in the Medical News, May 21, 1898.)

GLANDULAR FEVER IN CHILDREN.

Under this heading E. Pfeiffer has described, in a recent paper an acute glandular condition in children, which has hitherto been unrecognised, and which, he contends, ought to be regarded as one of the specific fevers. The illness commences suddenly in children between the ages of two and four, with coated tongue, vomiting, headache, abdominal pain, and rapid rise of temperature. These symptoms are accompanied by tenderness in the anterior triangle of the neck, and by stiffness and pain on movement of the head. There is usually some pain on swallowing, but there is never during the whole course of the illness any pharyngitis or tonsillitis. Generally two or three of the lymphatic glands, under the anterior edge of the sterno-mastoid, enlarge to the size of a walnut, and are acutely painful on pressure. They remain in this condition for two or three days, during which time the temperature continues to rise, sometimes reaching 104° F. Gradually the glandular enlargement subsides till, by the end of two or three weeks, complete resolution takes place, suppuration never occurring. The temperature falls by lysis, accompanying the subsidence of the glandular swelling; almost invariably the glands attacked are those on the left side of the neck, but occasionally, after they have subsided, the glands on the right side become affected in an exactly similar manner. In a large proportion of the cases there is a palpable enlargement of the spleen and liver. The enlargement of the gland is a distinctly idiopathic condition, there being neither tonsillitis, eczema capitis, otitis, nor dental caries to account for it. The disease is sometimes mistaken for mumps on superficial examination, but the swelling in the cases described is confined to the glands under the sterno-mastoid, the parotid gland remaining quite unaffected. Further, an attack of mumps renders the patient immune from further attacks, whereas many of the patients suffering from glandular fever have previously passed through an attack of parotitis.—*Jahrb. f. Kinderh.*, Leipzig, Bd. xxix. S. 257. (Edinburgh Medical Journal, July, 1898.)

GOITRE IN A NEW-BORN INFANT CURED BY THYROID TREATMENT OF THE MOTHER.

Mossé communicated to the Académie de Médecine, April 12, 1898 (*Revue mensuelle des Maladies de l'Enfance*, June, 1898), the case of a weak, cachectic new-born infant presenting a marked bilobed goitre. The mother, herself goitrous, was in excellent health, but mentally weak. The treatment of the mother consisted in the daily administration of one and one-half grammes of thyroid body. At the end of a month and a half her goitre had almost totally disappeared, and in the

infant the cure was complete. A later course of treatment considerably improved the general condition of the baby. (American Journal of Medical Science, November, 1898.)

HEROIN.

Strube (*Berl. klin. Woch.*, November 7, 1898) has tried heroin in 50 cases, chiefly of phthisis. It was given in the evening in place of morphine and codeine. The dose is 0.005 g. in pill or powder. Not more than 0.01 g. was given as a single dose, nor more than 0.025 g. in the twenty-four hours. The therapeutic effect was observed in from half to two or four hours, according to the dose. Sometimes the patients woke up again in three or four hours, when a second dose produced sleep until the morning. Heroin also proved itself of service in allaying cough in hæmoptysis. The author thinks that it is inferior to morphine as an anodyne. The soothing effect was very obvious, and especially in a case of combined aortic and mitral disease with chronic nephritis. A distinct general narcotic action was also noted. No ill-effect was observed. The diminished rate of breathing was not due to collapse. The respiration remained quiet and regular, and the pulse was mostly unaffected or very slightly reduced in frequency. (Epitome, British Medical Journal, December 3, 1898.)

ICE CREAM POISONING.

This is due to tyrotoxicon. Its discoverer, Vaughn, isolated this substance from poisonous cheese, poisonous milk, poisonous ice cream, &c.; chemically it is very unstable. It may disappear altogether in twenty-four hours from milk rich with the poison. It induces vertigo, nausea, vomiting, chills, rigors, severe pains in the abdomen, dilatation of the pupils of the eyes, griping and purging, a sensation of numbness or "pins and needles," especially in the limbs, and marked prostration and even death. Symptoms differ in individuals. This poison is thought to be the cause of the summer diarrhœa of infants. Poisoning from milk is less common than from certain varieties of cheese and from cream. In Michigan, in 1883, Vaughn collected the details of 300 instances of this cream poisoning; at the same time he found in the intestines of infants suffering from milk infection similar poisons. Its effects occur almost immediately after ingestion of this poisoned cream in infants or children previously healthy, and the symptoms are like cholera morbus, only there is graver and more profound collapse. This collapse may prove fatal in a few hours if the poison be not eliminated. (From Dr. E. H. Nichol's paper in Pediatrics, August 15, 1898.)

INFANTS, CARE and FEEDING of PREMATURE.

The milk, modified according to the prescription sent to the large dairy companies, is heated to 167° F. (Pasteurised), rendered slightly alkaline, and sent out in sterilised sealed bottles, from which it can either, after warming, be given to the baby direct, or first transferred to the dropper. If modified milk be not obtainable, the child must be fed upon humanised milk, if necessary diluted, or condensed milk sufficiently diluted, or a mixture of boiled cow's milk, water and cream, in the proportion of about one part of milk to four of water, with half a teaspoonful of cream to the ounce, if it can be obtained fresh and good. Very premature children must at first be fed every hour, and since the stomach is exceedingly small, not more than one to two drachms must be given at a time. The amount of food given and the intervals between the meals must be very gradually and carefully increased. If the child be very feeble brandy may be given, about five drops every two hours, repeated as often as may be necessary, and if it at any time become markedly cyanotic, oxygen gas should be administered. It may be given from five to ten minutes two or three or more times a day. In some incubators a special opening is provided for the introduction of oxygen gas; while in others it is necessary to introduce it through the air opening. If it be given in this way, care must be taken that the sudden entrance of a considerable quantity of oxygen does not cool the air of the incubator to a dangerous degree. In all cases a second thermometer should be placed by the side of the baby, as the thermometer passing through the lid is very likely to be influenced by changes in the external air, and does not give an accurate reading of the temperature in the interior. If the administration of food by the dropper cause vomiting, gavage must be resorted to. A small soft catheter is introduced into the stomach, and the food poured in by means of a funnel. At the same time, if it be thought advisable, the stomach can be washed out with tepid water. If after the food has been introduced the tube be pinched and quickly withdrawn, vomiting often does not occur. Gavage is, however, much more distressing to the child than the use of the dropper, and the latter should always be employed if possible. (From Dr. G. F. Blacker's paper in the Practitioner, July, 1898).

INJECTIONS, RECTAL SALINE.

The *Journal de Médecine de Paris* tells us that Pauchet has used salt water in the proportion of eight per 1,000 in hemorrhages after surgical operations and in parturition by means of rectal injections, with very good results, in the place of intravenous injections of artificial serum. It is well known, of course, that

these injections can be given intravenously in case of great hemorrhage accompanied by shock, and that they frequently do a great deal of good. So, too, subcutaneous injections of artificial serum are often exceedingly valuable. Pauchet claims, however, that the use of saline solution by the bowel is followed by good results, and has none of the disadvantages of either intravenous or hypodermic injection. The patient receives a rectal injection of a pint of hot salt solution, and this may be repeated if the collapse is great or the hemorrhage has been great, two or three times in the course of a day. He has known of cases where as much as three quarts have been absorbed in the course of twenty-four hours. Should the bowel become intolerant then other methods have to be resorted to, but Pauchet asserts that the pulse improves, the urine becomes abundant, the mouth becomes moist, and that this treatment also seems to diminish the vomiting following the use of an anæsthetic. A similar recommendation to that of Pauchet is made by Fieux in regard to post-partum hemorrhage, he also claiming that such injections are an exceedingly valuable method of treatment. (Therapeutic Gazette, June, 1898.)

IRON, ALGINATE OF.

The alginate of iron is best administered in a fine powder. Children take it readily owing to its tasteless character and absence of styptic quality. It is soluble in ammonia, but such a solution on coming into contact with the acid gastric juice would be decomposed. In doses of from 10 to 15 grs., given thrice daily, I have employed the alginate of iron in a number of cases of anæmia and chlorosis, and have compared the results so obtained with those got from other preparations of iron more commonly in use. As a result of these observations, I have found that, in many cases of chlorosis complicated by functional or organic stomach symptoms, the alginate may be employed when another iron preparation would not be tolerated. Of nine cases of pronounced chlorosis treated at the Western Infirmary Dispensary, seven showed such a marked improvement in three weeks that they considered themselves well. The other two made slower, but equally satisfactory, progress towards recovery. In six of these cases symptoms of gastric ulceration were present, and in all of these the alginate was well borne, and showed a sedative action by arresting vomiting and sickness. Unlike the majority of iron preparations, the alginate has no astringent effect, and in six of the above cases, where constipation was a marked feature, the alginate restored the healthy action of the bowel. When this preparation was withdrawn, and the saccharated carbonate substituted, constipation returned. It will thus be seen that we have in the alginate

of iron a compound containing an unusually large percentage of the element in a very assimilable and active form. Perhaps the fact that it is little acted on by gastric digestion accounts for the tolerance which the stomach exhibits towards it. Indeed, in the majority of instances it proved a gastric sedative, and although given in large doses, instead of inducing or increasing, it diminished constipation. (From Dr. William Maclennan's paper in the Glasgow Medical Journal, July, 1898.)

KUMYSS.—How to make.

The *Dietetic and Hygienic Gazette* for August says :—The value of kumyss as a nutrient and stimulating beverage in cases of general debility, malnutrition, and wasting diseases is well established. The original form of this beverage, as made in Tartary by the fermentation of mare's milk, is, of course, seldom available, and is by no means necessary. A very good and useful kumyss may readily be prepared as follows :—Fill a quart champagne bottle to the neck with pure cow's milk ; add two tablespoonfuls of white sugar, first dissolving it in a little water by aid of heat ; add also a quarter of a two-cent cake of compressed yeast. Then securely fasten the cork in the bottle and shake the mixture well ; place it in a room having a temperature of from 70° to 80° F. for six hours, and finally in the ice box for about twelve hours. It is then ready for use, and may be taken in quantities varying with the requirements of the stomach and general condition of the patient. In preparing the kumyss it is well to make sure that the milk is pure, that the bottle is sound, and that the yeast is fresh. The bottle should be opened with great care on account of the effervescent properties of the mixture, and the latter should be discarded and not drunk at all if there is any curdle or thickened masses resembling cheese, as these indicate that the fermentation has been prolonged beyond the proper time. It should be prepared as required for use. The virtue of kumyss resides in the fact that it nourishes, refreshes, and stimulates, with no subsequent reaction from its effects. Kumyss contains some alcohol, with fat, casein, lactic acid, and carbonic-acid gas. The cost is about fifteen cents per quart, including the bottle. (New York Medical Journal, August 13, 1898.)

LEAD POISONING FROM SODA WATER.

Dr. Jamieson (*Intercolonial Medical Journal of Australasia*, 1898) relates a case. The patient, a medical man, had through the summer been drinking freely of soda water at the rate of about three pints daily. The soda water was home made, in an ordinary seltzogene, and on chemical examination it yielded a considerable amount of lead. No very definite symptoms of

plumbism were observed in this case; there was no colic nor paralysis, the only significant sign being a number of minute, stellate, bluish patches on the gums. Dr. Jamieson properly advises that soda water should not be allowed to remain very long in the seltzogene, and that, before drinking any of it, an amount equal to the capacity of the lead tube and fittings should be drawn off and poured away, especially if a prolonged interval has elapsed since the previous supply was withdrawn. (Medical Chronicle, September, 1898.)

LEUCOCYTHÆMIA.—The Treatment of.

In a boy with exceedingly large spleen and with marked, though not quite so extreme, an excess of white cells, who had been under treatment for eighteen months at other hospitals and at St. George's Hospital without relief, the inhalation of carbonic acid has been rapidly followed by a considerable reduction in the size of the spleen, and with a remarkable improvement in the general condition. The method is simple. In order to obviate any respiratory complication, I have administered oxygen simultaneously, likewise in a very slight stream, through another tube connected with the oxygen supply. The duration of the inhalations did not at first exceed three minutes, but I now give seven and ten minutes' sittings several times a day, and I combine with the inhalation a preliminary application of galvanism to the spleen for five minutes before and during the whole sitting. There has never been any cyanosis or feeling of discomfort at the time or afterwards. A second case, that of a young man with less extreme splenic enlargement, but with very great increase of white cells, also showed general improvement, but the diminution in the size of the spleen has hitherto been only slight. (From Dr. Wm. Ewart's paper in the British Medical Journal, July 23, 1898.)

LEUCOCYTOSIS IN INFECTIVE PROCESSES.

In interpreting the phenomena we may say:—(1) That the local leucocytosis is a most important means of defence; (2) that the proliferative changes in the bone-marrow are the means by which the leucocytes concerned may be supplied in large numbers at any given place of need; (3) that the leucocytosis in the blood is an indication at least that this supply is being maintained. We may also mention that the vascular arrangements in the marrow are such as, on the one hand, to permit a ready action upon its cells of chemotactic substances circulating in the blood, and, on the other hand, to allow a free and rapid passage of the cells into the blood. (From Dr. Muir's paper in the British Medical Journal, September 3, 1898.)

LEUKÆMIA, ACUTE.

Rose Bradford and Shaw read notes of five cases of acute leukæmia at a recent meeting of the Royal Medical and Chirurgical Society. The disease is identical with that described by Fraenkel in 1895, and has been termed acute lymphatic leukæmia. All the patients came under observation for anæmia, causing excessive pallor, weakness, swelling and ulceration of the mucous membrane of the gums, cheeks, or lips, and fever. The anæmia and weakness preceded the affection of the mouth, so that the lesion of the mucous membranes cannot have supplied a seat of entry for the leukæmic virus, whatever that may be. Most of the cases also presented purpuric hemorrhages in the skin, and in two cases there was some melæna. These features gave the disease a superficial resemblance to some forms of purpura. The cases all ran an acute and fatal course, the maximum duration of the illness being eight weeks. The lymphatic glands were enlarged in all cases, slightly in four, considerably in one. The spleen was slightly enlarged in two cases. The blood showed a great excess of white corpuscles, varying from one white to four red to one white to forty-three red. Stained films of the blood were made in three out of the five cases, and showed that the excess of white corpuscles was almost entirely due to the presence of great numbers of large lymphocytes. In two cases these formed over 90 per cent. of all the white cells present, and in the third case these formed 61·8 per cent., and the small lymphocytes 12·2 per cent. of the total number of white cells. In two cases a few myelocytes were present, and in all the polymorpho-nuclear cells were remarkably scanty. The post-mortem examinations of four of the cases were detailed in the paper. (From Dr. R. Crawfurd's abstract in the Practitioner, November, 1898.)

MALARIA.

R. Koch, from experience gained in South Africa, says that quinine does not kill the plasmodium ; it merely checks its development. We know now the exact moment when to administer it to produce the desired effect, which is the stage in the development of the plasmodium that precedes sporulation. Quinine at the right moment cures tropical malaria even in its worst forms. Koch confirmed this assumption in every case except two moribund. Draining swamps, planting eucalyptus, sanitoria, &c., are ineffectual prophylactic measures. The only effective measures are to keep mosquitoes away and out of residences (there is an island off the coast which is free from mosquitoes and malaria is unknown there), and send scientific physicians to administer quinine at the proper moment. He

adds that ten to fourteen days must elapse after infection before the plasmodia accumulate sufficiently to produce an attack. He considers the quotidian form the manifestation of two superposed tertian forms.—*Deut. Med. Woch.*, June 16, 1898. (Journal of the American Medical Association, July 10, 1898.)

Malaria.

Birds suffer from malaria, and two forms of the parasite are recognised in their blood, known as proteosoma and halteridium. Ross allowed mosquitoes to feed on birds afflicted with proteosoma, and found that the parasite entered the mosquito's stomach. An hour later, examining his mosquito, he found certain oval pigmented bodies in the muscular lining of the stomach, which he inferred were a developed stage of the proteosoma, for in hundreds of test experiments these pigmented bodies only occurred in mosquitoes fed on proteosomatous birds. That these bodies were evolutionary forms of proteosoma was almost confirmed by the previous example of halteridium, the other malarial parasite of birds. In this organism, after the flagellum had broken away, it entered the pigmented halteridia, and these being transformed into travelling vermicules, possessed the power of entering the corpuscles. Ross inferred the same thing to occur in proteosoma, that the travelling vermicules entered the mosquito's stomach and there became the pigmented bodies. The further course of evolution of the proteosoma in the stomach is highly interesting. It grows in size and projects rounded bodies beyond the stomach walls. These Ross terms proteosoma coccidia. These coccidia undergo changes of appearance. Pigment comes and then disappears, but they finally burst and from them emerge germinal vermicules. These vermicules practically infested all the tissues of the mosquito, and what was highly important, these parasites were discovered in the venemo-salivary glands of the mosquito. The climax of these brilliant investigations was now within easy reach. Ross allowed mosquitoes to feed on birds afflicted with proteosoma, and after a few days he fed them on birds whose blood was void of parasitic infection. The blood of the latter in a few days was filled with proteosoma, thus inevitably establishing the fact that the mosquito acts as an extra-corporeal and intermediate host of the malarial parasite. The fact that the mosquito begins and ends its life in water may furnish an explanation of the undoubted malarious nature of swamps. Direct mosquito infection is probably less common than indirect, but that this interesting animal acts as the extra-corporeal host of the parasite seems substantiated beyond all chance of contradiction. (Medical Age, October 10, 1898.)

Malaria.—Prophylaxis against.

Prophylaxis against tropical malarial fever in our camps should consist of changing the clothes before retiring at night (unfortunately often impossible), avoidance of constipation, and a daily ration of quinine, to which whisky should be added when the subject has been exposed to rain. Sleeping in shacks or in tents with the sides open, and as far as possible selecting for camps high sites exposed to wind and sunshine should be encouraged. Hammocks should be swung at least three feet from the ground; in more permanent locations beds constructed of split limbs of trees are better than hammocks. Mosquito-nettings should always be used, and as the mosquito of the tropics is often smaller than his fellow of the North, a very fine mesh is indispensable. Add to these precautions a careful, systematic medical supervision of water supplies, kitchens, and diet, a daily inspection of each company by a medical officer, and, finally, rejection at recruiting-stations of men with positive histories of malarial infection, and the invaliding home of all patients who respond only temporarily to treatment and this bogey of the tropics will be robbed of half its terrors. (From Dr. J. E. Stubbert's article in the Medical News, July 30, 1898.)

Malaria.—Ergot in Chronic.

The following conclusions are taken from Dr. A. Jacobi's paper:—(1) There are cases of chronic intermittent fevers with large tumefaction of the spleen, that after having resisted the action of quinine, arsenic, methylene blue, eucalyptus, and piperine are benefited by ergot. (2) When enlargement of the spleen is not old and not firmly established the contracting effect of ergot is noticed within a reasonable time. (3) The attacks will disappear before the diminution in the size of the spleen is very marked. (4) Though temperatures, after the employment of ergot, remain irregular and now and then somewhat elevated, chills, as a rule, are not noticed with this elevation. (5) Plasmodia do not seem to disappear from the blood so rapidly as they do after quinine, when the latter is effective. But even while some are still present, the attacks being more or less under control, the patient will feel better. (6) Complicating local pain requires additional treatment with ice, or cold douches, or heat; chronic hyperplasia demands iodide of potassium or iodide of iron. Digestive disorders may indicate, as they often do, when quinine is expected to act, before the employment of ergot, an emetic, or a purgative, or stomachics. (7) An experience extending over forty years in which I have used ergot in many instances, justifies me in asserting at least this much: that there are many cases of chronic malaria,

apparently intractable, that will get well with ergot. (8) There are cases, occasionally, in which the return of elevations of temperature after the successful use of ergot makes the combination of ergot and quinine, or ergot and arsenic advisable, though quinine and arsenic had not been successful previously. (9) Ergot, like quinine, probably by its sudden contracting effect on the spleen, and by the forcing of large quantities of plasmodia-laden blood into the circulation is, in chronic malaria when hydræmia and spleen tumour are excessive, capable of bringing on the very first attack of chills and fever. (10) Recent cases of malaria have got better, or were improved under the extensive use of ergot, but many resisted a long time; that is why acute cases should rather be treated with quinine. (Medical News, October 22, 1898.)

MARMOREK'S SERUM.

Dr. William L. Baum of Chicago drew the following deductions from an analysis of the literature and his own experience: (1) in pure streptococcic infections the serum undoubtedly exercises a favourable influence on the course of the disease; (2) in the mixed infections the influence of the serum is noticeably demonstrable, but it merits further trial as an adjunct to other treatment; (3) considering the grave character of the complications of a nonstreptococcic nature reported, ordinary rules of therapeutics demand that in such cases, as with the diphtheria antitoxin, all indicated therapeutic procedures must be employed as well as the serum; (4) in view of the fact that erysipelas streptococci and phagocytes have been found to exist side by side in the lymph-channels, it is fair to assume that the influence of the serum is directly exerted bacteriologically on the streptococci and not entirely through a stimulation of phagocytic action; (5) the initial dose in all cases should be 20 c.c., to be followed by 10 or 15 c.c., according to the indications, every twenty-four hours. (Journal of American Medical Association, October 29, 1898).

MEAT POISONING.

A new organism connected with the production of poisonous effects due to the ingestion of diseased meat has been discovered by Dr. G. Wesenberg (*Zeitschrift für Hygiene und Infectionskrankheiten*, September 23, 1898, p. 484), who investigated an outbreak at Mansfeld, in which sixty-three persons became ill after eating the meat of a cow which had been killed in consequence of a diagnosis of traumatic pericarditis. Only those who ate of the minced meat in a raw state or of the partly cooked liver were affected; those who ate of the well-cooked meat escaped without exception. The symptoms were vomiting

and diarrhœa, violent headache and abdominal pain, general muscular weakness, dizziness, and lassitude. The discharges were sometimes greenish, sometimes brownish, and always extremely offensive. With few exceptions the symptoms abated in from three to five days, and all recovered except one, and that a doubtful case in a child who was not known with certainty to have partaken, and whose symptoms might have been due to other causes. Cover-glass preparations from the spleen showed fairly long and broad bacilli, and the same organisms were developed on agar from the meat itself. The characteristics of the bacilli as to growth, development, staining, &c., are given in detail. The organism proves to be quite different from any hitherto described by Van Ermengem and others who have investigated similar outbreaks. (From abstract in the American Journal of Medical Sciences, November, 1898.)

MILK SOMATOSE.

Dr. J. P. Zum Busch (*Boit d. Hillkund*, July, 1898) has used it a good deal in surgical practice, and especially after operations on the intestinal tract: herniotomies in adults and children, gastroenterostomies and resection of intestine as well as operations on the veriform appendix. The milk somatose was begun the day after the operation and he never saw vomiting or fulness after its use. It had no effect on the stools, especially it did not constipate, as might have been expected from the tannin contained in it. In some cases, given just before food it appeared to increase the appetite. He used it also freely in reconvalescence after serious diseases of different kinds, and then in the intestinal troubles of rickety children. The dose for adults was half a coffee spoonful in milk three times a day, and half as much for children. Under this treatment, the bowels soon acted regularly, and he got the impression that it acted favourably on the disease. He believes it to be a readily borne and easily used up form of nourishment, when but little food can be taken, and likely to be useful in all kinds of debility. The price at present prevents its more general introduction. (Medical Press and Circular, October 12, 1898).

MORPHINE HABIT.—Bromide of Potassium in.

A patient addicted to morphine had taken about three ounces of bromide when his family grew alarmed at the mental disturbances produced, and requested me to see him. I found him deeply under the influence of the bromide, and, learning the true state of affairs, had him removed to the hospital, the better to conduct the treatment. Not being satisfied with his statement that he had been taking on an average twelve grains of morphine a day, I cut the injection down to half a grain three

or four times a day, and then gradually reduced it to one-fourth of a grain twice daily, until on the fifteenth day of his hospital treatment he, of his own accord, refused further injections of the morphine, although it entailed considerable suffering. The cessation of the drug was followed by the usual digestive and nervous disturbances for several days. At the end of the third week the patient returned to his practice, freed from all desire for morphine, he firmly declares. As a result of the bromism and the withdrawal of the morphine there were great muscular relaxation and general lassitude, which were relieved by hypodermic injections of strychnine. The patient is of the opinion that the morphine should have been entirely withdrawn while he was under the full effect of the bromide, as the continuance of it, even in small doses, after the effect of the bromide had passed off, only fed the old flame and in a measure converted the treatment into the gradual-withdrawal plan, with its attendant suffering. (From Dr. C. H. Humphrey's paper in the Medical Record, September 24, 1898.)

MORPHINE POISON.—Oxygen in.

Fortunately for my patient supplies of the gas were able to be obtained without much delay. Artificial respiration by Silvester's method without oxygen quite failed to remove the intense cyanosis or to strengthen the pulse. The gas was administered by passing into the mouth a vulcanite nozzle attached to a tube leading from the cylinder, an india-rubber regulating bag intervening. At each inspiratory movement a stream of gas was allowed to flow, the tube being pinched close during the expiratory movement. This was kept up with the exception of the two intervals of natural breathing I have mentioned for about nine and a half hours. Altogether about 80 cubic feet of oxygen were used. During the very short intervals when the supply was stopped on account of a change of cylinder or when the œsophageal tube was passed the lividity rapidly deepened and the pulse as rapidly got weaker. In about half a minute after resuming the oxygen marked improvement took place as regards colour and strength of pulse. (From Dr. D. T. Playfair's paper in The Lancet, August 27, 1898.)

MYXŒDEMA, INFANTILE.

Dr. Bertram Abrahams showed, before the Clinical Society, a case of myxœdema in a child, aged 7. She was unable to walk until 5 years of age. When 6½ years old she rapidly became fat, her tongue got large, and in twelve weeks she became helpless and unable to feed herself. She was put on treatment with thyroid extract, and within thirty days her weight fell from 44 lbs. to 33 lbs., and she became more active

and was able to go to school. The treatment was left off by her parents and the symptoms returned. There was a curious induration of the muscles of the calf, probably due to the deposition of mucin. (Medical Press and Circular, November 2, 1898.)

PODOPHYLLIN.

The following are Drs. Mackenzie and Dixon's conclusions:—(1) that Indian podophyllin is an active purgative and a useful therapeutic agent; that it may be substituted for *P. peltatum*; but it is important that the physician should know which sample he is prescribing, as the Indian variety is nearly twice as physiologically effective as the American. (2) That the active principles contained in the crude resin are two substances—(*a*) crystalline podophyllo-toxin; (*b*) podophyllo-resin,—both of which act as excellent laxatives in small doses, without secondary constipation or other objectionable symptoms. (3) That although both these substances act very similarly on the alimentary tract, it is only the podophyllo-resin which exerts a true cholagogue effect, which shows itself rather by a large increase of the solids secreted than by an increased quantity. Both exert their specific activity when injected hypodermically in alcoholic solution, but in man so much irritation is produced as to forbid their employment in this manner. (Edinburgh Medical Journal, November, 1898).

QUININE POISONING, ACUTE.

A tonic containing iron, quinine, and strychnine was prescribed for Mrs. W——. There were ten grains of quinine to a four-ounce mixture, and, as the patient took only one teaspoonful dose, the poisoning was due to less than one-third of a grain of quinine. The medicine was taken after supper. In an hour Mrs. W—— complained of a burning, tingling sensation of the face, and by bedtime the sensation had spread to the entire body. I was called early the next morning, and found the patient's face badly swollen, especially the tissue about the eyes; there was an erythematous rash over the body, most marked on the face, hands, and down the spine. The patient complained of intense itching. I ordered a cooling lotion and free catharsis. In the next forty-eight hours all of the symptoms were intensified. The swelling had involved the areolar tissue about the neck, and the chain of lymphatics along the sternocleido-mastoid muscles. The eruption on the face was of a deep purplish colour, especially across the cheeks, where a butterfly mark was really erysipelatous in appearance; that on the body was as nearly like a measles rash as anything I can describe. After trying many things without avail, I found immediate relief from a wash of

dilute acetic acid. The patient had been poisoned in exactly the same way three times by the external use of quinine—first by a quinine and bay-rum hair wash, the next time was also by a hair wash containing quinine, and the third time by an ointment of quinine. (From Dr. Bennetta D. Titlow's paper in the Medical Record, September 17, 1898).

RHEUMATISM IN CHILDREN.—Treatment of.

Salicylic acid and the salicylates have given us a powerful ally in relieving the pain, which is the most distressing feature of rheumatism. As to the best method of administering salicylic acid there is some controversy. Salicylic acid itself is disagreeable to take, and produces such ringing in the ears as to be a dangerous drug for use in partially deaf people. Its compound with phenol, known as salol, is free from disagreeable effects upon the stomach, but the large proportion (40 per cent.) of phenol had a bad action upon the blood and kidneys, especially of children who have an idiosyncrasy to phenol. Methyl salicylate, oil of wintergreen, is an agreeable preparation. However, the profession has about decided in favour of the sodium and ammonium salts. Personally, I prefer the ammonium salicylate, as it is much less disagreeable to take than the sodium salt, and the ammonium tends to neutralise the depressing effects of salicylic acid. It is not nearly so nauseating as the sodium salt, and may be pushed rapidly until some result is accomplished. Either salt should be largely diluted with water when taken, as the disagreeable taste is thereby lessened and the water aids in eliminating morbific material. Some cases, however, are unable to take salicylic acid in any form. In them the relief of pain is best effected by antipyrin, phenacetin, or lactophenin in small doses. While neither the salicylates nor the coal tar preparations cure the rheumatism or prevent endocardial lesions, yet they relieve the most distressing features of the case, and by rest in bed in bad cases we help to prevent the endocarditis. Profuse acid sweats are very uncommon in childhood, but the fact that they occur in rheumatism would suggest the use of alkalies. Potassium is the alkali most used in such cases, but here again there is great liability of its depressing action on the heart, so that I prefer to use the calcium or magnesium hydroxids, as milk of magnesia, for the alkaline effect. (From Dr. P. F. Barbour's paper in Pediatrics, October 1, 1898.)

RHEUMATISM, CHRONIC.—The Treatment of.

A. Bier (*Münch. med. Woch.*, August 2, 1898) says that hot air undoubtedly lessens in a striking manner both the pain and stiffness in the joint. Almost the only effect produced by the

hot air is the active hyperæmia. The author maintains that he can get better results by passive hyperæmia. Passive hyperæmia, if properly carried out, should produce no pain. The leg should be bandaged from the toes up to the affected knee, and then an elastic bandage is applied above the knee over another bandage. Each case must be observed as to how far the passive hyperæmia can be borne with safety. It must not cause pain, and if pain is previously present it should be relieved by it. If the joint is painful the method may be used continuously, but the position of the bandage must be changed every twelve hours. In other cases it may be employed either during the day or night. The diseased joint itself is not bandaged. If pain is produced by this treatment, it is due to its faulty application. (From abstract in Epitome, British Medical Journal, September 10, 1898.)

RHEUMATOID ARTHRITIS.

Mr. C. T. Griffiths said that Bath was exceedingly rich in material. He thought that more had been learnt on the medical side in the last five years than in the twenty years before that. He was afraid that they could not conscientiously say that medical treatment did any good in advanced cases. Rheumatoid arthritis should be treated in an early stage. Patients with true rheumatism and gout generally applied for treatment before serious joint complications had occurred. In rheumatoid arthritis, on the contrary, distortion had generally occurred before the patient sought advice. When he was resident medical officer in the Royal Mineral Water Hospital, Bath, for five years, it was no uncommon thing for the physician to call in the surgeon after a few weeks' treatment, and sometimes adhesions were broken down. The cases did well on the whole, but few would dare to do as much in private practice. He thought more active attention should be paid to such joints. It must be remembered that the disease was one of debility, and often complicated by tuberculosis, and this knowledge must make them cautious. (Medical Press and Circular, June 22, 1898.)

SCARLET FEVER.—Antistreptococcus Serum in.

(Dr. Alex. Johnstone's *Report on Glasgow Fever Hospitals.*) Following, by analogy, the treatment of diphtheria by a prepared antitoxin serum, an attempt has been made, on a semi-scientific basis, to treat cases of scarlatina anginosa by means of a therapeutic serum. The severe throat lesion in this type of scarlatina constitutes practically the disease itself, and is possibly due to the growth and development of streptococci, which can be isolated in great numbers from the fauces of many

patients suffering from scarlatina anginosa. An antistreptococcic serum, prepared from the growth of this special micro-organism, has been introduced into medical practice, and has been receiving a careful trial in the hospitals. Very little can as yet be said as to its value, but certainly nothing startling has happened to make one believe that the new serum is of great value. (Treatment, July 14, 1898.)

SCARLET FEVER.—Infection in.

In a recent paper by Dr. J. W. Washbourn (*Clin. Jour.*, June 1, 1898), the author says:—There is a general belief that the skin contains the virus, and it has, indeed, been stated that the patient is most infectious during the state of desquamation. This latter statement is, however, incorrect, for there is evidence that patients are more infectious during the early stages than at a later period. The view that the virus is contained in the skin may have arisen from the fact that the patient is usually free from infection by the time desquamation has ceased, and a casual connection between the two phenomena has been assumed. But when we consider the matter carefully we find that there is only an indirect connection between the completion of desquamation and the freedom from infection. On the one hand, patients during the stage of desquamation are often quite free from infection. On the other hand, it is certain that patients may remain infectious for some time after desquamation has ceased. Probably in these cases the virus remains in the fauces as it does in diphtheria, in which disease the bacilli may remain for months after the inflammation has subsided. The practical bearing of these considerations is that we must not look upon the completion of desquamation as an absolute index of freedom from infection, although it is perhaps the best guide we possess. (Treatment, July 13, 1898.)

Scarlet Fever.—Return Cases of.

Dr. K. Millard thus concludes his paper:—I would say that I think that attempts to explain away return cases, as is often done, as being due to other causes than an infectious condition of the patient returning home are much to be deprecated. Other causes may perhaps operate very occasionally, but there can be no doubt that in the majority of cases the infection is really carried by the patient leaving hospital. Nor do I think that the infection is carried superficially as might be done by any person coming from an infectious atmosphere. The "bathing-out" precautions sufficiently provide against this, and the infection, if carried in this way, would almost certainly be conveyed at once, that is, in the first day or two, or not at all. We have, moreover, a sort of control experiment in the case

of our nurses and ward-maids who, since they live in an infective atmosphere under nearly similar conditions, might be also expected to carry out infection in the same way, which practically we know they do not do. We have no right to assume that the virus of scarlet fever has really left the system merely because we can no longer find any visible manifestation of it. It is in the direction of the science of bacteriology that we must look in the future for assistance in scarlet fever also. I think it very probable we shall find that it is really in the nasal cavity that the organism of scarlet fever most readily finds a lodgment in those cases where the infection is unduly prolonged. In the meantime it is to the condition of this cavity that we must pay most attention in examining patients with a view to pronouncing them free from infection. (British Medical Journal, September 3, 1898.)

SERUM RASHES.

Dr. A. Jacobi said that not long ago, when it was found that the antitoxin serum would cause eruptions, this in itself constituted a great objection to the use of the remedy, but that feeling had passed off. The eruption was not always characteristic. There were two principal forms observed, viz.:—(1) Erythema, and (2) urticaria. The same eruptions were observed after the administration of such medicines as the bromides, arsenic, quinine, and the coal-tar products, notably antipyrin. A number of different eruptions also were associated with rheumatism, *e.g.*, erythema, urticaria, and petechiæ. It was not surprising when one considered the great extent of the cutaneous surface that eruptions appeared on this surface rather than on the internal integuments and organs. (Medical Record, June 18, 1898.)

STRYCHNINE.—The Use of.

The plan which I have pursued in giving this drug is that which is condemned by the author of a paper in the *Therapeutic Gazette*, and is as follows:—As a rule, I divide one grain into thirty or thirty-two doses, and administer one dose four times a day. This lasts one week, and the following week a grain and a quarter is divided and given in the same manner. After this, instead of increasing the drug a quarter of a grain, as in the first week, I augment it only an eighth of a grain every week until the line of toleration of the drug is approached. This is most often shown by slight twitching in a leg, by a tendency to stiffness of the lower jaw, or by a fulness in or drawing of the neck. After this a somewhat smaller dose is given for two weeks or a month, and then an effort is made to push it to near the point of physiological toleration; or a retreat

is made to a point near the initial dose, and this is gradually increased until the line of toleration is again in sight. The dose is diminished, and the previous steps are repeated again and again. It will be found, however, that the dose which develops the line of toleration at one time will not, for a while at least, do this subsequently, and hence in the course of six months or a year I have frequently been able to give an eighth, sixth, or fifth of a grain four times a day, and, according to my opinion, with the best possible results. I have long been convinced that when strychnine is indicated in chronic diseases it must be given for effect, and in order to get its best possible effect it must be administered in large and continual doses—small doses being worse than useless for this purpose. (From Dr. T. J. Mays' paper in New York Medical Journal, October 8, 1898.)

SULPHONAL.—Women Susceptible to.

Pollitz (*Vierteljahrsschrift für gerichtliche Medicin*, xv, 2; *Wiener klinische Wochenschrift*, June 9, 1898) relates the case of a woman who was treated very successfully for a puerperal mental affection with sulphonal given to the amount of twenty-two and afterward fifteen grains daily for more than a year, with frequent interruptions of the treatment for weeks at a time. Finally, symptoms of sulphonal poisoning appeared—deep-red colouration of the urine and diminution in the amount of that secretion, obstinate constipation, and loss of appetite. The case ended fatally, but it is remarkable that periods of notable improvement in the woman's condition preceded her death. At the post-mortem examination there was found extensive disease of the secernent epithelia of the urinary tubules. Pollitz calls attention to the fact that the recorded cases of sulphonal poisoning have been in women for the most part. Among 21 cases, Schulz found that 20 were in women, and all observers have found that the victims of sulphonal poisoning were anæmic to a certain degree. The inference seems reasonable, Pollitz thinks, that certain conditions of the blood, such as chlorosis, have a direct connection with the supervention of toxic phenomena under the use of sulphonal. (New York Medical Journal, July 9, 1898.)

SULPHUR.

Internally sulphur is used either medicinally or in the form of sulphur waters. Empiricism teaches us that sulphur waters taken internally—especially, as is so frequently the case, if they contain salt—stimulate the glands of the alimentary canal, and increase largely the amount of biliary secretion, at the same time helping to flush out the kidneys. Hence they are indicated in so-called abdominal plethora, hyperæmia of the liver, and

allied conditions, and chronic gout. As is well known, sulphur waters are also used with advantage in cases of rheumatism, rheumatoid arthritis, stiffened joints, and in chronic catarrhal conditions of the alimentary canal, bronchi, and throat. Also Dr. Hermann Weber, in writing of the sulphur waters at Aachen, says that the "thermal treatment" (hot baths, &c.), "by favouring the action of the skin and general metabolism, constitutes a powerful aid to the specific methods adopted" in the treatment of specific constitutional disease. Dr. Vivian Poore, in an admirable lecture on the sulphur waters of the Pyrenees, states that the power which the sulphides possess in stimulating nutrition in scrofulous subjects whose nutrition is sluggish must have been often observed by anyone who has made a patient trial of their therapeutic value. Dr. Ringer has shown the value of sulphur in the form of calcium sulphide in furunculosis, &c., and Sir Alfred Garrod the value of sulphur in certain forms of chronic rheumatism. (From Dr. May's paper on "Winter in Egypt," Practitioner, November, 1898.)

SUPRA-RENAL GLAND.—Therapeutics of the.

At a meeting of the New York County Medical Association held May 16, Dr. Wm. H. Bates read a paper on "The Therapeutic Uses of the Supra-renal Gland," in which he spoke of the extract of this gland as the most powerful astringent known in medicine. Dr. Bates's personal clinical experience with this agent was principally confined to ophthalmological and otological practice, in which he had found it of the greatest possible utility, but he gave an interesting *résumé* of the results obtained with it by other observers in a variety of pathological conditions. One of the most promising fields for its employment seemed to be in cardiac trouble, and several cases were cited in which it had proved efficacious in angina pectoris. Its hypodermic use was attended by so much irritation as to render that method of administration unadvisable, while when taken into the stomach it seemed to be comparatively inert. It had been found that the most efficient manner of employment for acting on the heart and other internal organs was to place it carefully upon the tongue, where it was absorbed by the mucous membrane before reaching the stomach. (Boston Medical and Surgical Journal, July 9, 1898.)

SYPHILIS.—Treatment of.

Neumann concludes that (*a*) there is no drug yet known that will act as a preventive cure of constitutional syphilis, or avert the manifestations of symptoms at variable periods, although there are a few exceptions to this general assertion; (*b*) mercury and iodide are specific anti-syphilitic remedies that modify

syphilitic products, but do not destroy the virus. (From Dr. Neumann's paper in the Medical Press and Circular, July 6, 1898.)

TONSILS.—General Infection from.

Jessen (*Münch. med. Woch.*, June 7, 1898) emphasises the fact that tonsils with a normal appearance may contain foci of suppuration. If an exudation appear on the tonsils, and then later small abscesses are found in their substance, it must be taken for granted that the microbes have penetrated from without. The author thinks that these cases giving rise to severe infections may be recognised as such, as the exudation is not situated in the lacunæ, but exists in long yellow or yellowish-white streaks, extending from above downwards over the tonsils. The treatment of these cases should consist in as continuous application to the tonsils as possible. Extirpation of ragged tonsils for prophylactic purposes is distinctly indicated. Bacteria causing chronic affections, such as tuberculosis, may penetrate through the tonsil, and the author gives illustrative cases. He emphasises the necessity of attending to the tonsils in these cases. The adenoid tissue in the various tonsils is a more frequent starting point of general infections than is generally believed. (Epitome, British Medical Journal, October 22, 1898.)

TUBERCULIN R.

From a very careful observation of the effects of tuberculin R. given alone in doses as prescribed by Koch, and not accompanied by any other treatment on cases of phthisis pulmonalis, we are able to announce four cases of complete recovery out of thirteen cases treated. These four cases were the most favourable for treatment, as the disease was localised and the temperatures were not such as to suggest mixed infection. We feel that this result is little if any better than that of ordinary treatment combined with nourishing diet and good hygienic surroundings. In the lupus cases, on the other hand, we feel we have a powerful and useful means of treatment. In cases of phthisis it is evident that even with great care in the regulation of the dosage reactions do occur and the general collapse which followed 1 mg. in Case 5 was most alarming. It is possible that the explanation of this is due to the fact that the solutions of tuberculin R. are not of uniform strength throughout. (From Drs. Raw and Abram's paper in The Lancet, July 23, 1898.)

TUBERCULOSIS, HEREDITARY.

M. Bonnet (*Lyon Médical*, February 13, 1898) reports the following case, which he claims to be one of hereditary tuberculosis :— A seven months' child was admitted into the Crêche eleven

days after birth. On admission it weighed 1·7 grammes. It was at once put to the breast of a healthy nurse, and for two months it gained in weight, weighing at the end of that time 2·95 grammes. From this time onwards the weight gradually lessened, till at the end of the third month, when the child died, the weight was 2·35 grammes. Ever since admission there had been a cough; but during the third month the cough was much worse, and diarrhœa and fever were both prominent symptoms. At the post-mortem examination the lungs were found riddled with caseating tuberculous deposits. Several tuberculous ulcers were noted at the lower end of the small intestine. The mesenteric glands were enlarged and caseous, and tuberculous deposits were found in the liver, spleen, and kidneys. The child's mother died of phthisis pulmonalis two months after giving birth to the child. M. Bonnet considers that the evolution of the symptoms in this case, and the post-mortem appearances, point to the infection having been contracted before birth. He thinks the chances of being infected after birth very slight. The first ten days of life is the only time the child was with its tuberculous mother, and during that time she only suckled it for three or four days. The robust condition of the nurse in the Crêche, and the hygienic condition which there prevailed, are such as to totally exclude the idea of infection after admission. (Glasgow Medical Journal, September, 1898.)

TUBERCULOSIS, INFANTILE.

(1) *Dietetic treatment.*—The treatment consisted of supporting diet—giving a highly concentrated form of food in as small a quantity as possible. Thus, eggs and milk and expressed meat juice, and the farinaceæ are chiefly used. When children care for it, I frequently advise butter-milk and all forms of fermented milk; white meat, chicken, fish and shellfish, or broth made from the above at frequent intervals. (2) *Medical treatment.*—No drug that has ever been used has been found as efficacious as cod liver oil and creosote. The former I usually give in a 25 per cent. emulsion, and if the stomach tolerates it, I then increase gradually, giving a 50 per cent. emulsion, and if I find this well borne then I try the pure cod liver oil, giving a teaspoonful to a child under five years three times a day. If, however, the stomach will not tolerate cod liver oil, then I use it in the form of the bath, *i.e.*, by inunction. My plan is to have the child's body sponged with soap and water, then dry the skin thoroughly with a coarse turkish towel and rub the child's body, chiefly the chest and abdomen, for about five or ten minutes every morning. In this manner we can frequently have one ounce of oil absorbed into the circulation. Creosote is

certainly par excellence, the only drug to be used in this disease. While formerly we were restricted to the use of the ordinary beechwood creosote, within the last few years chemistry has given us the creosote carbonate. Dr. Holscher has reiterated his former good results, and states that Chaumier and others have given as much as 30 grams per day. He also refers to the fact that Professor von Leyden reports giving from 5 to 25 drops of this drug three times per day. My own experience with creosote carbonate has been limited to between forty and fifty cases. I usually give children of one year one drop, children of 5 years five drops three times per day. In other words, one drop for each year, until ten drops three times per day are given. There is usually a marked increase in the appetite noticeable, and a decided improvement in the cough, if any is present. Symptomatic treatment is not contraindicated, and urgent symptoms of whatever nature should be properly looked into. Alcoholic stimulation requires but one word, namely, that if necessary alcohol should be used, but cautiously. Hygienic treatment.—This, I consider to be the foundation for an ultimate cure if properly carried out. No medicine can equal fresh air and sunshine and cleanliness. (From Dr. Louis Fischer's paper in the Journal of the American Medical Association, October 29, 1898.)

TYPHOID BACILLUS, THE.

The typhoid bacillus is found in enteric fever in the intestinal lesions, in the mesentery glands, and in the spleen. It is present in some cases in the motions of typhoid fever patients and also in the urine, and has been occasionally found in the liver and in the blood. It is also present in some of the abscesses of remote parts which may be observed in the course of typhoid fever or during its convalescence. It is most readily separated from the spleen and in the following manner:—After the spleen has been removed wholly from the body it is washed on the surface with boiling distilled water, followed by absolute alcohol. It is then incised with a sterilised knife. By means of a sterile platinum rod inserted into the substance of the spleen inoculation of broth tubes or the surface of agar plates is made, and within twenty-four hours there is a copious growth of the typhoid bacillus. Another method is to remove a small portion of the splenic pulp by means of sterile instruments and place it in 200 c.c. of sterile distilled water in a flask which is incubated for twenty-four hours. The liquid is then brushed over the surface of the agar-plates and in twenty-four hours a copious growth of the typhoid bacillus is obtained. I have examined four spleens in this manner. With the exception of one case all gave a pure and abundant culture of the typhoid

bacillus. The exception showed a great preponderance of colonies of the typhoid bacillus on the agar plate, but one or two colonies appeared rather different from the others, being more opaque and fluorescent. These were separated and proved to be the bacillus coli. All the remaining colonies, as well as those from the other three cases, gave all the typical reactions of the typhoid bacillus, including the serum reaction (Widal's). The presence of this pathogenic organism in pure culture in the spleen and its invariable presence is one of the arguments in favour of the typhoid bacillus being the cause of enteric fever. (From Dr. Sidney Martin's Croonian Lectures, The Lancet, June 25, 1898.)

TYPHOID FEVER and MALARIA.—Mixed Infection.

A great many cases which were indistinguishable from typhoid fever without the most careful clinical examination proved to be clear cases of infection with the æstivo-autumnal organism of malaria. Over two hundred cases of typhoid fever were studied, and in nearly all of these there was also malarial infec-fection. In spite of these favourable conditions for mixed infection, in no undoubted fatal cases of typhoid fever (in which the diagnosis was confirmed by autopsy) was the malarial organism found. In five cases of typhoid fever the plasmodium of malaria was found in the blood during acute exacerbations occurring during convalescence from the typhoid fever. From these observations the following conclusions were drawn:—(1) Mixed infection of typhoid fever and malaria undoubtedly exists. (2) When typhoid develops in a case of active malaria the malarial element nearly always becomes quiescent, and has little or no effect on the course of the typhoid fever. (3) Malarial infection frequently outlasts the typhoid infection, and makes itself manifest during convalescence. (From Dr. James Ewing's paper, Medical Record, October 1, 1898.)

Typhoid Fever.—Ambulatory.

This case is of no little interest, for the victim afflicted entered hospital with practically normal temperature, complaining of some slight indisposition which had existed for several weeks previously, in which pains in the epigastrium and diarrhœa had been prominent features. The condition for the first day was looked upon as one of slight gastro-intestinal indisposition. To the surprise of the Resident, however, the student-in-charge ventured on the diagnosis of typhoid fever and the Widal serum test was forthwith tried, giving to everybody's astonishment a decided and positive reaction. Two days later the temperature rose, and as was seen from the chart, ran a more or less ordinary course to convalescence

Obviously the patient had been suffering from ambulatory enteric fever, and the symptoms were so slight as to obviate the necessity of seeking for medical advice until the weakness obliged him to enter the hospital. (From Dr. Martin's paper in the Montreal Medical Journal, October, 1898.)

Typhoid Fever.—Constipation and Feeding in.

Some dread, and so avoid, anything in the nature of a purgative in typhoid fever. Murchison was not so timid. He says :— "It does not follow, however, that no interference is justifiable when the bowels are constipated. When there is constipation at the commencement of the attack it is well to commence the treatment by a small dose of castor oil, or of rhubarb in peppermint water. When the bowels are confined at a later stage I am in the habit of prescribing every second or third day one or two teaspoonfuls of castor oil, or a simple enema." This I believe to be sound practice, though not common practice. It is, however, followed out at Cork Street Hospital at the present time. There, unless the evacuations are moderate in amount, and of normal typhoid appearance, the patient is given the day after admission 1 or 2 drachms of castor oil, or 2 grs. of calomel. Either in this small dose acts quietly, but efficiently; the dejecta are further examined, and if solid matter or undigested curd, &c., are still passed the dose is repeated. Constipation also is treated in a similar manner, allowing only one day to elapse without a motion. Thus at any stage of the disease ʒi of castor oil, or 2 grs. of calomel are given if indicated, without fearing any ill-effect whatever, whether of hemorrhage, perforation, or diarrhœa. There is no routine in this, judgment is used in each case, and in each act of prescribing. In Cork Street, where there is a great field for observation, and where the experience of years has been condensed, the patients are given a very small quantity of solid food—viz., bread-crumb or plain arrowroot biscuit about the third or fourth day of apyrexia. The temperature is carefully watched, and if there is any rise that evening, or the next morning, the food is discontinued and a dose of oil or calomel is given immediately. In nine cases out of ten the temperature falls that evening or the following morning, and after two or three more days food is again given without bad result. It is very seldom that a rise of temperature occurs after food given on the third or fourth day. As a general rule the amount of solids given is gradually increased daily. Anything of the nature of a true relapse is extremely rare. I really believe this to be due to the prompt clearing out of the bowel on the first appearance of a rise of temperature. I may be criticised for appearing to lay so much stress on a rise of temperature Of

the number of degrees it rises I pay but little heed; I look on it only as an indication — the earliest and most delicate, I believe—that something is wrong. (From Dr. H. C. Drury's paper in the Dublin Journal of Medical Science, August, 1898.)

Typhoid Fever.—Danger of Urine in.

Dr. Petruschky, in the *Centralbl. für Bacter.*, Band xxiii, No. 14, gives the results of looking for typhoid bacilli in the urine of 50 typhoid patients. In only three cases were they found in the urine, and in only one case could they easily be detected in the fæces. Although the fact that typhoid bacilli are eliminated with the urine has been known for some time, they were seldom present, and not in the beginning of the disease, so had no diagnostic value. Petruschky, however, believes they are a great factor in the epidemics of the disease; for in certain cases the number eliminated can be very great—millions of living typhoid bacilli per cubic centimeter—and, moreover, this elimination continues for weeks, even far into the period of convalescence. The author cites a case from Professor Scheele's department to show that these bacilli in the urine are infectious to man. The typhoid patient, during the absence of the nurse, urinated in a champagne bottle which stood by the bedside. When the nurse poured some of the fluid into a glass to give to the patient she noticed the cloudiness, tasted and swallowed the fluid; she was then aware that it was not champagne. Twelve days later she had typhoid fever. These observations certainly point to greater care in prophylaxis, especially in regard to the urine—antiseptic solution for the hands, urinals, and the urine itself. (Medical Age, 1898, p. 379.)

Typhoid Fever.—Incubation Stage in.

E. Jancken (*Wiener klinische Wochenschrift*, 1898, No. 27) had an opportunity of making an important observation. Certain troops marching through two small villages in which were a number of cases of typhoid fever, drank copiously of water given by the villagers. That infection was acquired in this way follows from the absence of other exposure. Moreover, other troops, passing through without pausing to drink, remained free from infection. Of the 36 cases the symptoms appeared suddenly in all, with headache, chill, fever, severe diarrhœa, abdominal pain, and weakness. The course was mild, and defervescence occurred in the third week. The beginning of the disease was noted in three men on the second day (*i.e.*, two days after infection), in seven on the third, in six on the fourth, four on the sixth, five on the seventh, in the other seven between the ninth and fourteenth days. This shows that under favourable conditions the typhoid bacilli can produce symptoms within

two days. In the cases observed the favourable conditions consisted in great fatigue, excessive thirst, and the ingestion of considerable quantities of the infected water. That the germs were not of unusually great virulence may be supposed from the mild form of the disease. (American Journal of the Medical Sciences, October, 1898.)

Typhoid Fever.—Widal's Test for.

The expectations raised some few years ago, when Widal announced his discovery that the serum of a patient suffering from typhoid fever, added to a broth culture of the bacillus of that disease, caused the bacilli to agglutinate in groups or masses, to lose their mobility, and to die, seemed doomed to disappointment by the subsequent observation that the same phenomenon might be produced by the serum of other febrile diseases. It was true that the positive results, while apparently constant in enteric fever, were exceptional in non-typhoid cases, but the exceptions were numerous enough to cast a doubt on each single observation, and to deprive the test of all certainty and diagnostic value. It was next found that in cases of true enteric fever the delicacy of the test was enhanced by the use of a larger proportion of the culture fluid, or, still better, by the dilution of the serum with water or broth. Widal himself adopted dilutions of 1:10, with better results in cases of true enteric fever, but without eliminating erroneous conclusions in others. Subsequent observers, however, ascertained that by carrying the dilution further a point was reached at which the serum of other diseases ceased to react, though the activity of that of enteric fever was unimpaired. Mesnil de Rochmont, from a large number of observations, came to the conclusion, fully confirmed by others, that the highest dilution in which a positive reaction could be obtained in any non-typhoid case was 1 : 25 ; and consequently 1 : 30 was given by Gruber and Stern, 1 : 40 by Förster and Kühnau, and 1 : 50 by Sklower and Scholtz, as results which would effectually exclude the possibility of error. Scholtz, having verified the observations of previous observers, especially Fraenkel, Stern, and Förster, and investigated exhaustively several hundred cases of enteric fever and others more or less closely simulating it, lays down the following propositions :—(1) That in cases of true enteric fever dilutions of 1 : 50 will generally afford positive indications within the first, and always during the second week, the energy of the serum increasing as the progress of the disease. (2) That the serum retains this property for many months or years ; in fact so long as immunity, with which it is in some way connected, persists. (3) That apparently positive results are afforded in a certain proportion of febrile diseases other than enteric, but

that this occurs only when the serum is comparatively concentrated, and never in dilutions of 1 : 30 or more. (4) That if, in the case of a patient suffering from a febrile disease of a doubtful character, a positive result be really due to the fact of his having passed through an attack of typhoid some years previously, a second examination made after the lapse of a week will not show the increase in the activity of the serum which would have been observed had the actual illness been genuine enteric, of however mild a type. The degree of dilution which such cases will bear depends chiefly on the time that has elapsed since the attack ; in those of very recent date it may be as high as in cases of present enteric fever, but it will remain stationary through the whole course of the actual illness. (From American Journal of Medical Science, September, 1898.)

Typhoid.—Intra-Uterine.

In the *Scottish Medical Journal* for July, 1898, Dr. Fordyce records a case of intra-uterine infection of a five-months fœtus from a woman who died of typhoid fever. The nature of the mother's illness was not definitely recognised until the day before her death, and as a post-mortem examination was refused, confirmation was impossible. The diagnosis of the fœtal infection depends upon direct bacteriological examination of the tissues and fluids of the child. On examining its body, no naked-eye lesions could be detected, and there was no sign of disease of the intestinal canal. Agar tubes were inoculated from the kidney, spleen, and intestinal contents, and in each case colonies of a bacillus were obtained identical with Eberth's bacillus, the specific organism of typhoid fever. Tubes inoculated from the blood remained sterile. In Widal's reaction we have now a certain means of distinguishing the two, for the serum of a person suffering from typhoid has no agglutinating action upon the bacillus coli, while upon the typhoid bacillus this action is very striking. Serum taken from the peritoneal cavity in Dr. Fordyce's case, showed the agglutinating action very markedly, but with blood taken from the left ventricle the reaction failed to occur. From a study of the comparatively small number of cases recorded by others, the author draws the following conclusions : (1) That typhoid fever can be communicated to the fœtus *in utero* ; that as a result of this infection the fœtus may die, and be expelled prematurely ; (3) that the fœtus may be born alive, but weakly, and evidently suffering from the infection ; (4) that the fœtus may be born alive and healthy, having passed through and survived the infection *in utero* ; (5) that infection of the fœtus in maternal typhoid does not necessarily occur. (From Dr. T. W. Eden's paper in Treatment, August 25, 1898).

WHOOPING COUGH.

Dr. R. B. Gilbert read a paper before the American Medical Association. He stated that four-fifths of the deaths occurred in children under two years of age. The disease is most fatal in extremely hot or cold weather. Tincture of belladonna in increasing doses as soon as disease is recognised was advised, to which bromide of potassium and phenacetin could be added. Dr. Louis Fischer, of New York, agreed that antipyrin in some cases does good. Bromoform properly given is also useful, but one must be sure to procure a good product. Poisoning from bromoform settling to bottom of the bottle should be avoided. The best treatment consists in sending the child into the park to receive pure air, and in sleeping with the windows open at night. Dr. W. A. Fankboner, of Marion, Ind., secures good results in some cases with quinine, 10 grains three times daily. Dr. H. M. McClanahan, of Omaha, emphasised the importance of nourishment, and advises feeding immediately after the paroxysms. He considers antipyrin the best drug. (Medical News, June 11, 1898.)

Whooping Cough.—The Treatment of by the Inhalation of Medicated Oxygen.

In a thesis presented to the University of Paris, and quoted in the *Gazette hebdomadaire de médecine et de chirurgie* for October 2, Dr. M. Lacroix gives the results of his experience in the treatment of 25 cases of pertussis by inhalations of oxygen medicated with certain antispasmodics. The substances used were bromoform, bromide of camphor, and cherry-laurel water. The apparatus employed consisted of a bag containing the oxygen, to which is attached a rubber tube conducting the gas into a reservoir, which he calls the saturator. This reservoir contains pieces of pumice stone which are saturated with the medicaments to be used. From the reservoir is an outlet tube furnished with a bone mouthpiece. The pumice stone is placed in a glass and is saturated little by little with the medicaments, the whole being stirred the while with a glass rod. It is then replaced in the saturator, and at each sitting a pinch of bromide of camphor is added. When the stone fills the apparatus a tampon of absorbent wool slightly compressed, and intended to stop the aspiration of particles of pumice or bromide of camphor, is placed on top. When bromoform is used, it is previously dissolved in the cherry-laurel water. Dr. Lacroix uses 10 grammes of each, but the quantity used may be varied according to circumstances. The mouth piece is placed in the patient's mouth, and a slight pressure of the oxygen bag sends the gas through the saturator, and the gas thus becomes

impregnated with the vapours. The taste of the mixture is said to be slightly disagreeable, but is, nevertheless, well tolerated by children. M. Coyon has treated at the Hôpital Trousseau over a hundred cases in this manner, without observing any pronounced dislike on the part of the patients. Dr. Dutremblay, on the other hand, finds a mask more convenient, and that method could be employed if the child refused to submit to treatment. The saturator needs renewal about every four or five days. About forty-eight quarts of oxygen are used daily in four inhalations—viz., twelve each time, about 8 a.m., midday, 4 p.m., and 8 p.m. The treatment is given without regard to either the access or the time of feeding. Dr. Dutremblay, however, divides the doses, and gives a few quarts of inhalation after each access, and this method would probably be advisable in private practice. The advantages alleged for this treatment by Dr. Lacroix are:—(1) It modifies the accesses of cough, diminishing them both in number and intensity. (2) It obviates complications, such as broncho-pneumonia, hernia, prolapse of the rectum, epistaxis, vomiting, constipation, fœtid stools, &c. (3) It strengthens the organism, relieving the general condition, and placing the organism in good form to resist the invasion of infectious diseases so frequent after whooping cough. The method seems to commend itself as rational, not difficult of application, and well worthy of a trial in this obstinate and distressing malady. (New York Medical Journal, November 5, 1898.)

AFFECTIONS OF THE NERVOUS SYSTEM.

BRAIN TUMOURS AND OPTIC NEURITIS.

Krauss (*Philadelphia Medical Journal*, October 1), in a study on brain anatomy and brain tumours, concludes that optic neuritis is present in about 90 per cent. of all brain tumours, more often in cerebral than in cerebellar, the location of the tumour exerting little influence over the appearance of the papillitis. Over the production of the papillitis the size and nature of the tumour also has little influence, while slow-growing tumours are less likely than the more rapid to be accompanied with optic neuritis. He believes it "probable that unilateral choked disc is indicative of disease in the hemisphere corresponding to the eye involved," and considers it doubtful whether increased intra-corneal pressure is solely and alone responsible for the production of an optic neuritis in cases of brain tumours. (Journal of the American Medical Association, October 29, 1898.)

BULLET IN THE BRAIN LOCATED WITH THE ROENTGEN RAYS.

Braatz (*Cent. f. Chir.*, 1898, No. 1) reports an interesting case in which he was able, after two attempts, to remove a bullet from the brain substance, the patient making a complete recovery. The symptom most complained of was an intense pain that was unbearable when the head was held to the left side. After a number of skiagraphs had been taken, one was obtained which showed the ball in the anterior portion of the brain. In this skiagraph an iron wire had been placed above the ear and extending on to the forehead, while in front of the ear and perpendicular to the first wire a measurement was made in centimetres by means of horizontal pieces of wire. The first operation consisted in the formation of a bone and integument flap by means of Gigli's wire saw, the opening being increased in size by the use of rongeur forceps. The ball, however, was not found, even after the dura was opened and the brain palpated. The difficult breathing of the patient necessitated a cessation in operating, and the wound was closed, and healed by primary union. There was, however, no relief from the symptoms. A series of skiagraphs were now taken, but it was impossible to get a picture in the anterio-posterior direction. In all of these cases Reed's base line was marked by lead wire, and showed in the skiagraphs. At length by placing the plate at an angle on the left temporo-frontal region a skiagraph was obtained from a second point, which showed the shot. In this case a lead wire was placed above the nasal bones so that this point was readily determined. A second shadow, which was due to a fragment of lead upon the opposite side of the cranial cavity, was also shown, and from these points and their relation, it was roughly determined that the ball lay deeper in the brain substance than had been at first supposed, and anterior to the opening made in the first operation. This rough method of determining the location of the ball, which is crude compared with numerous mathematical methods now employed, served the purpose of guiding the ingenious efforts of the author to the successful removal of the ball in the following manner. The bone integument flap formerly made was again removed and the dura mater. A blunt needle was now employed as a probe, and the brain punctured in the direction of the bullet, which was finally located. A dull fruit-knife was then passed along the needle, thus avoiding hemorrhage, and after this a pair of closed Kocher's forceps with which he finally succeeded in grasping and removing the bullet. The patient made an uninterrupted recovery. (American Journal of Medical Science, July, 1898.)

CHLORAL DEMENTIA SIMULATING PARETIC DEMENTIA.

Coe (*Medicine*, August, 1898) relates two cases in whom the symptoms of paretic dementia were so well marked that this diagnosis had been made without hesitation. One of these was a lady, aged 56, married, of good family, and without hereditary taint, who had been ill during the past five years, and had delusions, transitory in character, of a grandiose form, some months previous to the time of coming under the observation of a most excellent family physician. Ataxia was marked, especially in the lower limbs. General tremor was present and the tongue could scarcely be extended, so marked was the trembling of that organ. There was pupilary inequality and the speech was tremulous. Insomnia was marked, and for this and the shifting pains in the back and limbs a well-known proprietary article, the chief constituent of which is hydrate of chloral, had been employed in moderate quantities for about a year and a half. Recently this amount had been increased, yet the total amount taken did not exceed on an average 20 grains of chloral daily. The prognosis which had been given was gloomy; but in six weeks after the discontinuance of all hypnotics the patient was so far restored to health that she assumed the management of her estate. In the other case the symptoms were similar, except that the mental break-down was more complete, and the patient, by his own admission, had taken large dozes of chloral. The withdrawal of this drug was followed by the most distressing symptoms, but in four weeks they all subsided and the patient was able to take an ocean journey to his own home. (Medical News, September 10, 1898.)

CHOREA, PARALYTIC.

Porte records a case (*Journal de Médicine*, July 25, 1898) of a child of neurotic temperament who became totally paralysed in one leg during the course of an attack of chorea. The paralysis lasted two months and disappeared completely. The occurrence of paraplegia with chorea has been recorded by West and others, but the explanation of the condition is obscure. The author believes that paralysis may arise under different circumstances, first in patients with a strongly hysterical and neurotic temperament, and in such there does not seem to be any myotrophic results, while in the ordinary forms of choreic paralysis myotrophic changes are very marked, as pointed out by Raymond and Rondot. It is important to remember the fact that paralysis may occur in chorea (whatever may be its explanation) as an error in diagnosis might easily occur, the case being taken for one of infantile paralysis

with a much graver prognosis, for it seems to be a fact that choreic paralysis always disappears. (Epitome, British Medical Journal, September 17, 1898.)

CONUS TERMINALIS.—Lesion of the.

H. Labin (*Wiener klin. Wochenschr.*, 1898, No. 10) reports the following :—A man of 55 years fell from a wagon, a distance of about a metre, striking on the back. At once he felt severe pain in the back and was unable to rise. The whole body "felt as if dead." There was retention of urine and fæces, lasting for five days. The paralysis lasted a week. Examination soon after showed no alteration in the eyes (the visual field not lessened); no pain in the spine; no atrophy nor loss of sensibility of the upper extremities, but loss of strength there, increased reflexes, and in the deltoids fibrillary contractions. In the legs passive motion was normal, the muscles weak, the tendon reflexes much exaggerated, the plantar reflex abolished, the cremasteric, abdominal, and other skin and mucous membrane reflexes intact. Sensation was preserved in all parts of the lower extremities, but there was a striking alteration of the temperature and pain senses. This was largely localised to both feet above the malleoli, higher right than left, the middle and lower half of the lateral thirds of the calves, the lateral thirds of the thighs, the nates and sacral regions, the inner and middle gluteal, the anal, perineal, posterior scrotal regions, and all the surface of the penis. Hot and cold test-tubes could be recognised only by the touch, and differences of five to fifteen degrees [Cent.?] could not be differentiated or localised. Sensibility to pain was absent in the same areas. Deep sensibility and sense of position were not affected, except as to the toes. During the patient's stay in the hospital the motor power increased slightly, but sensibility remained unchanged. The author discusses at length the differential diagnosis, excluding hysteria, traumatic neurosis, syringoymelia, and inclines toward the diagnosis of hemorrhage in the lower cord, with concussion of the upper cervical cord affecting especially the pyramidal tract. Special analysis is made of the probable nature and position of the lesion in the lower part, which the author believes to be central hæmatomyelia of the posterior horns of the lower lumbar and all the coccygeal cord. A useful list of articles bearing on the various points involved adds to the value of the paper. (American Journal of Medical Science, 1898, p. 726).

DIPHTHERIAL PARALYSIS.

At the British Medical Association meeting, Dr. Sims Woodhead said that the distribution of the primary paralysis was as follows :—Out of 494 cases, 185 were primary paralysis of the

fauces, 197 of the oculo-motor muscles, 10 of other muscles, and 102 of primary paralytic heart failure. In regard to the time of onset, important observations were made. Of the paralyses of the palate the great majority occurred between the fifth and fifteenth days; none before the fourth. Of the oculo-motor paralyses the bulk occurred between the fourth and seventeenth days; none before the fourth. Of the paralyses of other muscles, about one-half occurred between the tenth and fourteenth days; none earlier than the tenth. Of the cardiac paralyses the bulk occurred between the fifth and tenth days, and in a few instances as early as the second day. In each of these groups the onset of the paralytic symptoms might be delayed for many days. It was obvious, however, that in the human subject the bulk of the paralyses occurred at a comparatively early date, and cardiac paralyses earliest of all. The fact that the heart might be affected so much earlier than the other muscles appeared to indicate that the primary lesion probably occurred in the nerve-cells. (The Lancet, August 6, 1898.)

DURAL INFUSION.

Jacob (of Leyden's clinic) considers himself justified by the results of his experimental work on dogs, in recommending the utilisation of lumbar puncture for direct therapeutic applications in cerebro-spinal diseases in man, when the method is perfected by further research. No reaction followed injections of 50 c.c. of $\frac{1}{4}$ to $\frac{1}{2}$ per cent. carbolised water, nor subarachnoid injections of 35 c.c. of $\frac{1}{2}$ per cent. solution of chloral hydrate, but severe transient symptoms of endocranial pressure and of intoxication followed the injection of 25 c.c. of a 4 per cent. solution of potassium iodide, which lasted from ten to twenty-four hours. Pain and agitation also followed the injection of phys. solution, although as much as 75 c.c. of a 1 per cent. solution of sodium chloride could be injected without reaction. The iodine is rapidly absorbed and retained by the brain matter and spinal cord, not appearing in the urine until long after the usual interval when administered *per os.* The fact that a small amount of a non-irritating fluid injected is nearly all absorbed, while a large amount—50 c.c.—is not, suggests the existence of a system of valves in the subarachnoid spaces. His experiments also confirm the theory of the incompressibility of the cerebral substance, the symptoms ascribed to pressure from an increased amount of cephalo-rachidian fluid being really due to anæmia caused by the pressure of the fluid on the artery.—*Gaz. d. Osp. e d. Clin.*, from *Berlin Klin. Woch.*, 21 and 22. (Journal of the American Medical Association, September 10, 1898.)

EPILEPSY.—Auto-Intoxication in.

Among Weber's latest experiments is one of considerable importance, which has proved to his own satisfaction that the frequent cause of the paroxysms in hereditary epilepsy is due to an organic poison which accumulates in the body as the result of mal-assimilation and deficient metabolism depending originally on a congenital defect in the central nervous system. The composition of the poison is very complicated, and it apparently consists largely of an ammonio-carbamide salt. Dietetic treatment hastens the elimination of this deleterious substance, and this is the first duty of the physician; at the same time, the bromide preparations are not to be neglected when the paroxysms are imminent, as they are effectual in soothing the excited nervous system temporarily till the nutritive changes are adjusted. The diagnosis of this morbid state must be inferred from the constituents of the urine, the analysis whereof must be of an exhaustive character to determine whether it is due to this substance or an altered condition in the nerve cell itself. (Medical Press and Circular, August 3, 1898.)

Epilepsy.

Dr. Hermann Beer (*Klin.-therapeut. Wochenschrift*, September 11) divides the subject as follows:—(*a*) Genuine epilepsy. Epileptic attacks without apparent cause. (*b*) Symptomatic epilepsy. (1) Intoxication epilepsy. Alcohol, lead, carbon dioxide, ergotine, antipyrin, arthritis (urea), nephritis (urea), intestinal sepsis. (2) Infectious epilepsy. Syphilis, cholera, variola, morbilli, sepsis. (3) Diseases of the brain. Emboli, apoplexy, tumours, multiple sclerosis, hyperæmia. (4) Reflex epilepsy. Masturbation, menstruation, pregnancy, constipation, intestinal parasites, dilatation of the stomach, cicatrices, thrombosis in the external auditory canal or in the Eustachian tubes. (5) Traumatic epilepsy. Injuries of the head. (6) Cardiac epilepsy. (7) Physical and mental over-exertion, irregular mode of living, worry, and depression of spirits. (Medical Record, October 15, 1898.)

Epilepsy.—Flechsig's Treatment of.

This treatment has been for some years subjected to trial in various countries. It consists in the administration of opium, commencing with minute doses, say 5 minims of the tincture three times a day, and gradually increasing the dose until 90 to 120 minims are given in the course of a day. The opium is then suddenly discontinued, and ordinary doses of the mixed bromides are substituted for it during the course of three or four weeks. It has been claimed by Flechsig that at the end of the treatment the fits cease and that some of the cases

permanently recover. Should the fits not cease at the end of the treatment it is to be recommenced again. Schroeder (*Centralbl. f. Nervenh. u. Psychiat.*, Coblenz u. Leipzig, August, 1898) publishes the records of his experiments with this treatment, of which the following is the result:—Out of twenty-three patients, two remained free from fits for seven and a half months. In all the rest the fits returned again after a shorter or longer interval; but in the majority of cases they were diminished in frequency. The previous administration of bromide made no difference in the results. He instances one or two spontaneous recoveries from epilepsy without any medicinal treatment, and he thinks that the patients experimented on by different physicians have been too dissimilar with regard to age, causation, and other circumstances to make comparison possible. He thinks that the treatment should be tried with young people, in whom the disease has been of short duration. He believes that Flechsig's treatment is not without risks, and that the patients should be treated under medical care, preferably in bed, and, if possible, in an institution. (Edinburgh Medical Journal, November, 1898.)

Epilepsy.—Prognosis in Long Remissions in.

Dr. Wharton Sinkler, of Philadelphia, read a paper based on a study of 24 cases of idiopathic epilepsy, in which there had been remissions of the attacks of periods varying from two to twenty-nine years. In none of these cases was trephining done. In a few of these cases the freedom from attacks was attributable to the long-continued use of remedies, but in the majority of cases, as soon as the attacks were arrested, all medication was stopped, and therefore the relief from the seizures could not be ascribed to treatment. In his opinion the conclusion to be drawn from a study of the 24 cases presented was that epilepsy should be regarded as an incurable disease. It was encouraging, however, to find from the long intervals which had occurred in these cases that the disease was amenable to treatment, and that a sufferer from epilepsy might look forward to the probability of long remissions, in which he was as competent to fill his place in the world as if he had never had the disease. None of the authorities on the subject of epilepsy who had been consulted had expressed an opinion as to what should be considered a cure in epilepsy, nor had they paid any attention to the occurrence of long periods of freedom from the attacks, with the exception of Niemeyer and Gray. The former in a general way had said that "long remissions might occur," and the latter writer that "cases might be free from attacks for ten, fifteen, or even twenty years," and that he had known in his own practice "remissions of several years." (Medical Record, July 9, 1898.)

EPILEPTIC AURA.—Rare Forms of the.

Dr. L. Pierce Clark (*Canada Lancet*, May) details as the result of his researches into the characters of the epileptic aura some uncommon forms among his patients. (1) Phrase recurrence.—Our patient repeats the phrase *nicht wiedersehen* or sometimes *auf dem reirdem*, which has no correspondence with her normal thought, and of the meaning of which (if any) she is ignorant. (2) Aura lacrimalis.—A patient has a confused and stupid feeling for some two hours before the attack, and either weeps and cries loudly, or weeps quietly by himself. (3) Pain in the hypochondrium. (4 and 5) A dreamy state.—In these cases the state is always an aura, and does not take the place of an attack as described by Hughlings Jackson and Gowers. (6) Migraine.—A patient has migraine over an area two inches and a half in diameter in the left temple for some ten hours before the attack. Salicylates will sometimes abort the attack. (7) Spasm of the masseters. (8) Abnormal olfaction.—A patient notices an odour of "wood smoke" before about one-third of his attacks. (9) Analgesia of the tongue.—About ten or twelve minutes before the attack loss of sensation in the anterior portion of the tongue occurs, and the patient is unable to speak from want of control of the tongue. (10) Pain in the right thigh. (11) Peripheral analgesia.—A sudden numb feeling over the entire periphery, recurring every two or three minutes until the seizure occurs. (12) A chilly feeling in the lumbar region. (13) Three patients describe an indefinable sensation of fear and desire to escape from the room without actually making any effort to do so. (From abstract in the New York Medical Journal, May 28, 1898.)

FUNCTIONAL NERVOUS AFFECTIONS IN CHILDHOOD.

Saenger (*Munch med. Wochenschr.*, 1898, xlv. 249) divided his material into four groups:—(1) Neurasthenia. (2) Hysteria. (3) Neuro-hysteria. (4) Hereditary neuropathy psychopathic (nimderwerthigkit). The symptoms met with in these groups are the following:—(1) Anæmia was present, as a rule, instability of the psychical equilibrium, anxiety, rapid fatigue, complaints of cardiac palpitation, vertigo, præcordial distress, increased vaso-motor irritability, a feeling of dissatisfaction, constipation, insomnia (a difficulty in getting to sleep, pavor nocturnus), frequently also a tremor of the eyelids when the eyes were lightly closed; occasionally true phobias. (2) Greater intelligence than is usually found in neurasthenics, a lurking, watchful, sly facial expression, stigmata as in the hysteria of the adult, monosysmptomatic phenomena; aphonia, contractures,

paralysis of the extremities, cough, tremor, anomalies of carriage (hysterical scoliosis, torticollis), blepharo-spasm, ptosis, hemichorea; in rare cases amaurosis. (3) This is the form most frequently met with in children, presenting manifold phenomena and variously combined interesting symptoms. There is only slight intelligence, indifference; pains are complained of in the head and eyes, nervous asthenopia is present, also photophobia, contraction of the field of vision, absence of the conjunctival reflex, absence of the pharyngeal reflex, enuresis, somnambulism, hallucinations. (4) Hereditary taint, frequent convulsive seizures during the first years of life, later conditions resembling tic in the form of grimmacing the choreic movements; great peevishness and sensitiveness, stubbornness, violent temper, afraid of being alone; involuntary naughtiness, viciousness, strong egotistic qualities, with a tendency to torture man and beast. These mental defects, frequently accompanied by retarded bodily development, and also by imperfectly balanced brain power. Between these groups all transitional forms may be found. Boys and girls are attacked in about equal proportions. The age at which they are most usually affected is between ten and fourteen years, testifying to the unfavourable influence of our present methods of teaching and schooling. Prognosis is favourable in the first three groups, unfavourable in the fourth. In the treatment itself we must advocate taking these children from school, giving them the opportunity for recuperating, improvement in diet, and by ordering general neuro-toxic measures, douches, cold rubbings, baths, electricity, energetic suggestions as to psychical development, but never by hypnosis. (From abstract in Pediatrics, October 15, 1898.)

GRAVES' DISEASE.—Partial Thyroidectomy.

The following are Dr. Arthur Booth's conclusions:—(1) Cases of Graves' disease may be entirely cured by operative measures. (2) Pathological and clinical evidence is in support of the view that the symptom complex is the expression of a primary neurosis multiplied by a secondary glandular intoxication. (3) While the ultimate cause of the disease of the gland is still a matter of speculation and a mortality of 7 per cent. after operation is reported, we cannot justly recommend it as a routine plan of treatment. (4) Sudden death may occur in the course of or soon after operation, and has not as yet received a satisfactory explanation. (Medical Record, August 13, 1898.)

GUMMA, CEREBRAL.

Habart exhibited a watchman who came to him some time previous with the parietal bone jutting out, and having every symptom of an imprisoned tumour. According to his own

history he had a fall in 1896, to which he attributed this condition. The first treatment adopted was the inunction of mercury, as the case had many suspicious symptoms. This at first seemed to be successful, but it ultimately proved ineffective. About the beginning of the present year he returned, complaining of great pain in the head and vertigo. Operative interference appeared to be the only measure left, and trepanation was adopted. On reaching the dura mater a small tumour about the size of a pigeon's egg was discovered, which on being cut into discharged pus and grumous débris. The pain and vertigo immediately ceased, while the wound healed without any sign of febrile symptoms. On the twenty-fifth day after the operation he was suddenly attacked with an epileptic fit, and these have continued without any diminution of intensity ever since. (Medical Press and Circular, June 29, 1898.)

HEMORRHAGE, CEREBRAL.

The following are Drs. Kelynack and Bythell's conclusions:—From a consideration of these 70 cases, we arrive at the following conclusions:—(1) Hemorrhage into the cerebrum occurs in a little over four per cent. of all fatal cases examined at the Manchester Royal Infirmary. (2) It occurs much more frequently in the male sex. The exact percentage is 77·14 males and 22·86 females, or in the proportion roughly of 3½ males to 1 female. (3) The age varies from 15 to 76, but averages 50·26. The average age of males is 48·93, and that of females 54·53. (4) The clinical features are somewhat variable, but are generally sudden in onset and characterised by rapidly-developing unconsciousness. (5) An atheromatous state of the vessels is the most frequent etiological factor present. Atheroma, granular kidney, or both of these conditions, were noted in no less than 82·85 per cent. of the cases. Cardiac hypertrophy was present in 57 per cent. (6) The age varies according to the nature of the lesion leading to the rupture of the vessel. The highest average—57·18 years—is reached in atheroma and granular kidney, but in hemorrhage associated with malignant endocarditis it is only 34·6 years. (7) The right hemisphere was the seat of the hemorrhage in 40·90 per cent. of the cases, the left in 56·07, while both sides were affected in 3·03 per cent. In no less than 76·11 per cent. the lesion was situated in the basal ganglia and internal capsule. (8) The commonest secondary conditions are of a pulmonary and vascular nature. (9) The duration of life after the occurrence of the hemorrhage varies from a few minutes to nearly three weeks, nearly 70 per cent. ending fatally in the first three days. The duration depends to some extent upon the seat of the lesion, but not so much as might be expected. (Medical Chronicle, September, 1898.)

INSANITY, ADOLESCENT.

A class of cases troublesome to the medical man and distressing to the parents is that of adolescent insanity. A youth of from 16 to 20 years of age, who has been brought up with the greatest care and had every attention paid to his moral training, commences to commit petty acts of theft, to make baseless charges, and to lie in the most bare-faced manner without apparent cause or object. He will invent the most unlikely stories and will go to the greatest trouble to arrange matters so as to bolster up his imposture—even writing letters or sending telegrams to himself to that end. He will often prove to be a masturbator and will get into trouble with his father's maids. Mentally he will in all probability be below par and his memory and capacity for acquiring knowledge be under the average at his age. Physically he will be badly knit and weedy looking, and he will be given to associating with his social inferiors. He will also be very likely to develop early habits of intemperance and gambling. Such a youth will be a fearful thorn in the side of his parents, and every sort of persuasion and menace will be employed to change him, but in vain; this sort goeth not out except by special treatment. The first thing to do is to get him away from home surroundings, away into the country, to a farm-house if possible, where he can have lots of fresh air and exercise. He must be constrained to ride or labour with his own hands until thoroughly tired every day. His food must be plentiful and nutritious, consisting largely of eggs and milk, fish and puddings, but no meat of any sort whatever. The whole aim of this treatment is to starve the reproductive system and to make him fat. To this end enormous quantities of eggs and milk must be consumed; a dozen to twenty of the former beaten up in four quarts or more of the latter should be his daily allowance. If this treatment be religiously carried out, as the boy fattens his mental and moral character will, as a rule, improve, and ultimately become normal; otherwise he may develop confirmed mental disease. An attack of this sort in a girl is even more distressing and disastrous than in the case of a boy. (From Dr. Crochley Clapham's paper in the Quarterly Medical Journal, July, 1898.)

IRIDOPLEGIA, UNILATERAL.

The following conclusions seem warranted:—(1) That unilateral reflex iridoplegia is a condition which may arise in tabes or paretic dementia, being confined to one side for an indefinite time before the other pupil becomes similarly affected. (2) That it is also found in cerebral syphilis, and may be permanently limited to one eye. (3) That it often occurs as a remote result of disease of the third nerve or its nucleus, and may be the only

demonstrable clinical evidence of a pre-existing third-nerve paralysis. (4) That it is always indicative of central-nerve degeneration involving either the oculo-motor nucleus or its efferent branches. (5) That it is generally of syphilitic origin. (6) That the lesion producing unilateral reflex iridoplegia is situated in the centrifugal portion of the reflex mechanism. (From Dr. Leszinsky's paper in the New York Medical Journal, August 6, 1898.)

MIGRAINE.—Treatment of.

It is well known that when with headache the extremities are cold, some relief is obtained by warming the hands and feet at the fire. In many cases the recumbent position is required in addition. In a large class of patients an attack may be cut short by many hours by going to bed, applying hot bottles to the extremities, and drinking (as soon as the stomach will retain it) some hot tea or milk. A glow soon pervades the surface, and the spasm is relaxed. Relief so obtained is not very liable to relapse. After a few hours the ordinary duties of life may be resumed, and although sleep is the best completer of the cure, its place may sometimes be taken by a good dinner. I believe this treatment, where it can be carried out, to be far superior to any drug treatment, though it may be aided by a good dose (30 to 60 grs.) of bromide of potassium. It is a curious fact, and may be taken as the exception which proves the rule, that a few patients find the recumbent position aggravates their pain, and even prefer to spend the night in an armchair rather than go to bed. And also, in the later stages, moving about sometimes seems to hasten the end of an attack more than remaining quiescent. It is a remarkable confirmation of the vasomotor theory that the chief remedies, which are very valuable in some patients (but by no means in all) are antipyrin and phenacetin; both of them powerful vaso-dilators. Opium not only fails to relieve the headache, but generally increases it, unless given in such large doses as to compel sleep; and then, on waking, the pain generally returns. And opium contracts the vessels. The action of citrate of caffeine is very variable. (From Dr. Handford's paper in the Edinburgh Medical Journal, September, 1898.)

MENINGITIS, CEREBRO-SPINAL.—Treatment by Potassium Iodide.

The number of cases thus treated under my observation was ten, and other cases which I did not see were similarly conducted. One of the early cases, far advanced before recognised, died. There was no further mortality; the disease seemed to yield visibly as the patients came under the influence of the

iodide. Few of them recovered without some permanent injury. Several had the sight of one eye destroyed by suppurative choroiditis. Some lost their sense of hearing. In one case there was a paralysis of a limb. I attribute the preservation of life to the iodide, because the ergot, morphine, and blisters had utterly failed in my previous experience. Since the experience above related I have tested the usefulness of potassium iodide in quite a number of cases of sporadic meningitis, and my confidence in its utility increases with experience. Quite recently I administered 50 grains a day for six days to a child eighteen months old. Its father is a thoroughly equipped physician. He agrees with me that the iodide was the first medicine to exert any appreciable influence over the morbid process. The child recovered with the loss of its sense of hearing. (From Dr. H. A. Moody's paper in the Journal of the American Medical Association, September 24, 1898.)

MENTAL WEAKNESS IN CHILDREN.

As to the treatment, I can only give you some hints. It consists of a judicious combination of hygienic, medical, physical, moral, and intellectual training. The muscles usually have no co-ordinating power, and this has to be obtained by suitable exercises. In this way the hands become more supple, and can be usefully employed, the gait is improved, the eyes do not wander so much, and listlessness and inertness are much lessened. The restlessness of the excitable class must be soothed by appropriate remedies. Ideas of justice, self-reliance, prudence, and forethought must be inculcated, and the habit of obedience to authority must be obtained. As regards the intellectual training, we commence by educating the senses, and as the sense of touch is the most important of them, we begin by educating this first. Afterwards come the senses of sight, hearing, taste, and smell. Ideas must be taught by the use of concrete forms, as abstract notions cannot be grasped. Speech is taught by means of a speech-drill. Later on we proceed to higher branches of learning, such as reading, writing, arithmetic, drawing, &c. Alternately with this education some manual instruction by means of carpentering and gardening for boys, and sewing and domestic work for girls, will prove useful, while Sloyd work can be practised by both sexes. (From Dr. Fletcher Beach's article in Treatment, October 13, 1898.)

MICROCEPHALY.—Operation in.

In the December number of the *American Journal of Nervous and Mental Disease*, Dr. W. W. Keen contributes some interesting remarks on the advisability of operation in cases of microcephaly.

His views are based upon the work and writings of others, but also on an experience of 18 cases of his own in which he had operated. Of these the youngest patient was eighteen months old and the eldest six and a half years. Five died after operation and of the 13 that recovered six were slightly improved and seven were not benefited. So that in Dr. Keen's experience the prospect of improvement is not great and the improvement which may take place is only slight. The conclusions, therefore, are that in a moderate number of selected cases of a medium degree of microcephaly death will ensue as a result of the operation and in a small number slight improvement will follow, but in the majority no result, good or bad, will result from the operation. He does not think that a child with an average-sized head is a suitable case for operation nor, on the other hand, does he think operation justifiable in cases in which the head is excessively small. In patients of more than seven years of age he is of opinion that improvement is not to be expected and in all cases after operation the greatest attention must be paid to developing the child's faculties by education. (The Lancet, July 16, 1898.)

NEURALGIA.

In one of the Berlin Medical Societies, Hr. Eulenburg said that according to Benedikt, by certain symptoms and by the specific character of the pain, it was possible to determine with which of the three kinds of neuralgia we had to deal. The neuralgias proper were characterised by the paroxysmal onset of the pain. During the paroxysms themselves there were variations in the intensity of the pains. In them we found the known painful points. The second group was that of the excentric algias, in which there was disease of the roots. Here there were no paroxysmal pains, but very short rapidly coming and vanishing pains, repeated at short intervals; they were known as lightning, lancinating pains, caused by some irritation in the posterior root. Here we had no painful spots, but pains in the vertebral column and in the skin. The third group, that of the peripheral algias, showed more continuous pain, and a local painfulness on pressure. Most of the painful headaches and the otalgias belonged to this. According to Benedikt migraine was a painfulness of the brain, which by a peculiar mechanism was projected to the surface of the skull. The treatment of neuralgias must always be casual, but, on the other hand, we must not lose sight of the symptoms. The latter indication could be met in various ways, by anæsthetising and sedative means, by derivative skin irritation, massage, electricity, and psychical suggestion. The mechanical treatment of neuralgias of Naegele was less known. This treatment was in many

respects well thought out and easily practicable. He gave a warning example as to the suggestive method of treatment in a hysterical patient, who came under treatment for severe cervical neuralgia. The medical attendant bethought himself of suggestion, and proposed to kill the nerve by introducing an electrical sound into the œsophagus. The patient was relieved of the pains, but became possessed with the idea that the nerves of the œsophagus and stomach were killed and the organs destroyed. She could no longer swallow, &c. She then developed a systematic hysterical paranoia. Hr. Liebreich drew attention to injections of antipyrin. Hr. Albu had often seen disturbances of the digestive track, principally obstruction, cause neuralgias. He recommended aconitine in obstinate neuralgia. Hr. Eulenburg warned them against the use of aconitine, the preparations were uniform, and the dosage could not be made safe. (The Medical Press, August 31, 1898).

PARALYSIS AGITANS.

Erb (*Ztschr. f praktische Aertzte*, 1898, No. 5) advocates a simple, nutritious, mixed diet, moderation in eating and drinking, very little spirits, coffee, or tea, the avoidance of all mental excitement and fatigue; moderate exercise in the open air. Of internal medicines he recommends arsenic internally. The use of electricity in the form of the faradic bipolar bath he has undoubtedly seen of frequent service. The author has usually had recourse to mild hydropathic treatment, especially in combination with forest and mountain air. Hot baths he has found to have bad effects. Of great importance is the symptomatic treatment—the diminution of the tremor and muscular rigidity. For this purpose we possess drugs which in most cases give satisfactory, often brilliant, results. Erb considers that the most useful is hydrobromate of hyoscine (Merck's), but a preparation as fresh and reliable as possible is to be employed. In very small doses, given hypodermically, it diminishes the tremor, the restlessness, and stiffness for some hours, and makes the life of the patient tolerable, and enables him to follow his employment. Erb states that he has seen the most severe tremor arrested by this drug. For many years he has used it without any bad effect. A slight increase of the dose is sometim s necessary. He has seldom seen any unpleasant effects of the drug, and he fails to understand Mendel's statement that he has seen alarming intoxication symptoms after minimal doses. Such symptoms Erb has never observed. The drug has seldom proved useless, and seldom has any patient been unable to continue it. He recommends very small doses hypodermically, from two to four decimilligrammes once or twice daily, and therefore caution in the administration is necessary. Often it is

useful to inject the full doses in the forenoon and half the dose in the evening. The patients have then less tremor during the day and sleep well at night. The hyoscine can also be given internally in pill form with good effect, but then a somewhat higher dose is required. Duboisin, which has been recommended by Mendel, has a similar action. It may be given in doses of two to three decimilligrammes two or three times daily. Duboisin acts better than hyoscine in some patients, in others hyoscine is more useful. These two drugs Erb considers to be the best palliative agents in paralysis agitans. The favourable influence of railway journeys on some patients caused Charcot to suggest the use of a kind of vibrating chair, which has occasionally been of some service. (From Dr. R. T. Williamson's abstract in the Medical Chronicle, June, 1898).

PARALYSIS, INFANTILE.—Massage in.

Surgeon Lieutenant-Colonel Lee gives the following directions to mothers:—For a quarter of an hour twice daily. Set the child on a chair, or lay it on the bed, or let it sit on somebody's knee. (1) Rub the paralysed leg from the foot right up to the top of the thigh. Rub upwards only. Put the broad part of your hand on the back of the child's leg. In rubbing the thigh you may put your hand, first, on the back of the child's thigh and afterwards on the front of its thigh. But always rub upwards, and be sure to go as high as the child's loins. Whilst rubbing with your right hand, hold the child's foot with your left. Use for rubbing any kind of oil. (2) Take hold of the child's leg with your two hands just above the ankle. Rub round the leg with your two hands in the opposite direction, as though you were wringing out some clothes. Work up the leg and thigh, from the foot up to the top of the thigh, in the above manner. (3) Take the child's calf with your two hands. Put your fingers to the back of the leg and your thumbs to the front. Squeeze the soft parts out between your fingers and thumbs, so as to flatten the leg out and make it as wide as possible. Work right up the leg and thigh in this manner. (4) Put your right hand over the front of the child's knee. Put your left hand against the child's foot. Push up the child's foot, and holding your right hand in front of the child's knee, you will prevent yourself doing any harm. You want, if possible, by pushing the child's foot, to make the child push against your left hand with all its might. This is the most important of all the exercises. (5) Flip every part of the leg and thigh with your fingers, so as to make the whole of the limb quite red and warm. (6) Gently rub up and down all over. This will take the stinging away which was left by the last movement. (Indian Lancet, July 1, 1898.)

PARALYSIS, POST-TYPHOID.

Jean Foix (*Thèse de Paris*, 1898) publishes a careful study of this affection, with an analysis of four cases. He states that paralysis may supervene in typhoid fever either during the invasion, the height of the disease, or convalescence, the latter being by far the most frequent; there may be an extended interval of apparent health between the primary disease and the paralysis. The author classifies the forms which the paralysis may take in the following order of frequency:—Paraplegic, hemiplegic, aphasic (chiefly in children), monoplegic, and affecting a single nerve, more particularly the median. The sensory disorders, subjective and objective, run *pari passu* with the motor; the sensibility of the affected part is always diminished and sometimes lost. The sphincters are now and then involved. Muscular atrophy is a constant symptom in peripheral neuritis of typhoid origin; it progresses with the paralysis and is often incurable. In the central forms of œdematous infiltration of the cord may be found, and also of the spinal meninges; in the peripheral forms the paralysis is due to parenchymatous neuritis. The actual cause is undoubtedly the toxins produced by Eberth's bacillus, although the germ itself has occasionally been found in the nerves, and may hence play a more direct part. The paraplegic form is of two kinds, due respectively to affection of the cord and the peripheral nerves. With regard to treatment, Foix believes solely in the systematic and methodical application of the galvanic and faradic currents. (From abstract in Epitome, British Medical Journal, September 1, 1898.)

PYRAMIDON IN NERVOUS TROUBLES.

Landenheimer (*Ther. Monatshefte*, April, 1898) has experimented with pyramidon, a derivative of antipyrin, upon more than one hundred persons suffering from some disturbance of nervous function. The headaches which so often occur during convalescence from various psychoses, almost all yielded to pyramidon in doses of 10 to 15 grains. From one-half to two hours were required for the medicine to take full effect. In the rebellious headaches of alcoholism, pyramidon was given with equally good result, the effect of the drug lasting nearly or quite ten hours. In three cases of cerebral tumour the headache was also stopped, but the dose required at first was 24 grains three times a day. This amount was afterward reduced to 6 grains a day. Painful cramps in the limbs of alcoholic patients were benefited, and one patient who took, without satisfaction, for an infraorbital neuralgia, 120 grains of antifebrin daily, found that 30 to 40 grains of pyramidon taken at a single dose early in the morning would give complete relief

for 24 hours. In no instance was any toxic symptom observed. The maximum amount prescribed was 45 grains daily, divided into three doses, and continued for ten days. The writer considers pyramidon a specific for rheumatism, but this view does not seem to be very well supported even by his own experience. (Medical News, July 16, 1898.)

SUBARACHNOID SEROUS EXUDATION.

(1) A severe blow on the head may result, either directly or by *contrecoup*, in a local bruising, congestion, and swelling of the brain-tissue, with serous exudation into the subarachnoid space, either with or without œdema of the brain substance. (2) If this accumulation of fluid occurs over the motor centres it may be imprisoned so as to cause focal pressure symptoms, simulating meningeal hemorrhage. (3) This accumulation of fluid is not compensatory. (4) The lesion is self-limiting, the resulting paralysis disappearing in the course of a few days. (5) This condition may be mistaken for middle meningeal or middle cerebral hemorrhage. The diagnosis is difficult and sometimes impossible. Factors aiding in the diagnosis are (*a*) an atypical course, (*b*) absence of steadily increasing coma, and (*c*) the appearance of sensitiveness to pain on manipulation of the head, even after the unconsciousness is so great that questions are not answered. The general symptoms (restlessness, stupor, headache, and moderate febrile movement) may be the same in both conditions. (6) The mere presence of paralysis following a blow upon the head is not necessarily an indication for immediate operation, and in the absence of steadily deepening unconsciousness and of steady progression of other cerebral symptoms, it will be often wise to postpone surgical interference, though generally speaking an exploratory operation is always justified in case of focal paralysis following head injury. (7) This lesion is to be particularly borne in mind in the case of children and young adults, and perhaps in alcoholic patients. In elderly patients the same set of symptoms points more decidedly toward hemorrhage. (Conclusions from Dr. Walton's paper in the American Journal of Medical Science, September, 1898.)

SYPHILIS AND INSANITY.

Dawson (*American Journal of Insanity*, April, 1898) suggests a provisional classification of the forms of mental disease due to syphilis as follows:—(1) Insanity of early syphilis (primary and secondary). (*a*) Acute toxic insanity. (*b*) Melancholia with or without dementia, probably due to cerebral anæmia. (2) Insanity of late (tertiary) syphilis. (*a*) Insanity due to syphilitic disease of the base and vessels. (*b*) Insanity due to syphilitic disease of the convexity. Most, if not all, cases of cerebral

syphilis in which insanity has been caused by epilepsy will fall under the second head (2, *b*) but should rather be classed with epileptic insanity, being only indirectly due to syphilis. (3) Metasyphilitic (parasyphilitic) insanity. (*a*) Insanity of tabes. (*b*) General paralysis. This classification includes only cases in which there is a gross anatomical change at the basis of the mental symptoms. Syphilis, however, may indirectly affect unstable minds by the fear of contracting the disease, the worry, remorse, and anxiety produced by its existence, and the pain, insomnia, and other sensory symptoms so common in its course. (Boston Medical and Surgical Journal, November 3, 1898.)

SYPHILIS OF THE NERVOUS SYSTEM.

The prognosis as to what may be accomplished by treatment must, of course, be guarded, for obviously the possibilities will depend upon the length and extent of the gummatous process. The indications are clear to apply antispecific treatment in a vigorous and positive way. Failure of the symptoms to ameliorate under treatment by no means affects the validity of the diagnosis, and this is true for reasons already alluded to. Treatment may fail to show the results desired, especially in advanced cases. If a hemiplegia be due to structural changes which have gone so far as to be permanent, entire relief cannot at so late a date be reasonably hoped for. Well marked paralyses, however, and somnolence and stupor, which have lasted weeks and even months, have repeatedly cleared up under vigorous treatment. While it is characteristic of a hemiplegia due to specific causes that it is seldom complete, this cannot be accepted as an invariable rule for such hemiplegias are at times entirely complete. (From Dr. C. W. Hitchcock's paper in the Medical News, August 6, 1898.)

TABES.—A Study of.

Trevelyan (*Quart. Med. Journ.*, July, 1898) publishes a series of observations based upon twelve cases of tabes, three of which occurred in women; but of fifty-two cases from the author's notebooks no fewer than twenty were in females, the usual proportion given being only 1 in 10. Syphilis was the cause in the majority of cases, but attention is called to the potency of cold in bringing out the symptoms of a latent tabes: in none of the author's cases could cold be established as the causative factor. One instance, in which there was no history of syphilis, is recorded as being of doubtfully traumatic origin. Optic atrophy was present in two out of the twelve and eleven of the 52 cases referred to. Ataxy and pains were often absent in these cases. Bladder symptoms were often among the earliest

manifestations; they appeared as irritability of the organ, or as weakness of the sphincter or detrusor. Of the twelve cases, two exhibited tabetic arthropathy, which assumed the hypertrophic or benign form of Marie; in one case there was a spontaneous fracture. Aortic disease was present in two cases, in one of which it was latent; in this instance it was due to rheumatic fever, while in the other it resulted from the syphilis which led to the tabes. In discussing treatment, the author refers first to the great influence of the mind over the body in this disease, and the consequent importance of giving the patient a cheerful prognosis. With regard to general treatment, he has not seen any very obvious results from anti-syphilitic remedies, though he thinks that a course of them should always be tried in early cases. A short course of arsenic may also be advisable, and some good has appeared to result now and then from the use of testicular extracts, though this may be a result of suggestion. Galvanism along the spine and hydrotherapeutic treatment may also at times prove of service. As regards symptomatic treatment for the lightning pains, the author uses local measures, anti-neuralgic remedies, and, as a last resource, morphine; he regards cocaine as worse than useless. For the ataxy the palm is given to the method of graduated exercises as practised by Fraenkel, over-fatigue being of course most carefully guarded against. Finally, it is recommended in refractory cases to try the various therapeutic measures systematically, and to carefully note the results obtained. (From abstract in Epitome, British Medical Journal, October 8, 1898.)

Tabes.—Experimental.

At the recent German Medical Congress (*Medical News*, May 14, 1898) Edinger read a paper on "Degenerations of the Posterior Columns," which had been experimentally produced in rats previously made anæmic and then compelled to overwork for forty-eight hours in a treadmill run by water-power. They were then killed and the cords stained and examined. Degenerations of the posterior columns were found, and from the results of the experiments Edinger thinks the etiology of tabes is made clear, believing it to be a degeneration of the sensory nerve fibres from over-exertion when their ordinary powers of resistance have been lowered, whether by anæmia, or toxic condition, or syphilis. He considers this is very important in its bearings on prophylaxis, believing that syphilitics, those anæmic or run down, should be carefully advised against the great danger of excessive exertion, exposure. (Medical Age, July 11, 1898.)

Tabes.—Treatment of.

Dr. Riley (*Journal of Nervous and Mental Disease*) refers to the treatment of this disease. His own practice for some time past has been to direct the treatment along two lines—viz., (1) to eliminate poisons that are in all probability being constantly formed; (2) to improve the general health and nutrition of the patient, special treatment being directed to the seat of the lesion. The first of these lines of treatment—that is, the elimination of the poisons from the body—he believes can be best accomplished by the free use of water internally. He usually instructs his patients to drink from five to seven pints of water daily, and to take it in small quantities and at short intervals between meals. This flushes the tissues, and keeps the poisons that may be in the body in solution, thus favouring their elimination. It also increases the activity of the eliminative organs. In many cases it is best to have the patient drink the water hot. Besides this, the use of warm baths, particularly the electric-light bath, which is usually very agreeable to these patients, is to be highly recommended. This does good, not only by the elimination of poisons, but also by relieving the distressing pains, which are so troublesome in this disease. By correcting all bad habits, prohibiting the use of tobacco and alcohol, and placing the patient on an aseptic diet, the further intoxication of the body from without becomes almost impossible. The second indications for treatment are best met by the proper use of hydrotherapy, electricity in its various forms, massage and other manual and mechanical movements, including suspension treatment. He is satisfied from the results of the treatment in a large number of cases of this kind that a great deal more can be done for patients suffering with this disease than is usually supposed. He believes from his own experience that when they can be put under proper conditions—the daily life of the patient controlled, and the treatment above indicated intelligently applied—as much can be accomplished in this malady as in many other diseases affecting other parts, which are generally considered less intractable. (From abstract in the New York Medical Journal, September 24, 1898.)

Tabes.—Treatment of by Exercise.

Dr. Zenner (*Cincinnati Lancet-Clinic*, July 16) thus sums up his paper on this subject, read before the American Medical Association:—(1) All cases should be benefited by the exercise treatment, many to the degree of apparent recovery, unless there are special contra-indications to the treatment. Failures under these circumstances usually mean faulty methods or that the treatment has not been persevered in sufficiently long. (2) Contra-indications are:—Loss of vision, mental impairment,

bone and joint disease, spasticity and muscular atrophy, the presence of strong irritation symptoms, rapid progress of the disease, a state of great exhaustibility, and serious organic disease. (3) In cases of anæmia, poor nutrition, and lax joints, these general and local conditions should be remedied before the treatment is instituted. (4) The conditions most favourable for the treatment are, a stationary or almost stationary state of the disease, good general health, intelligence, hopefulness, and perseverance. (5) Light cases are more amenable to a (practical) cure, but bad, even bedridden, cases often give brilliant results. (6) The necessary duration of treatment varies from a month or more for the lightest, to six months or a year for bad cases, but the exercises must be kept up in order to insure the continuance of the improvement. (7) Success of treatment depends upon thorough knowledge of the method. This is especially true of bad cases. (8) Exercises should be chosen most suitable to remedy the existing ataxia, and every effort should be made to do them with greatest precision. (9) The sense of fatigue is often blunted in ataxics, while over-fatigue injures them. The patient should, therefore, be guarded against too taxing or too prolonged exercises or other unnecessary efforts. (10) To obtain most benefit from the treatment the constant supervision of the physician, at least in its early periods, is absolutely necessary. (New York Medical Journal, July 30, 1898.)

TABES DORSALIS AND THERMAL BATHS.

Donadieu (*Gazette des Eaux*, May 19, 1898), in his paper at the Montpellier Medical Congress, expresses his opinion on the thermal treatment of tabes at Lamalou. During the first period of tabes—that of "lightning pains"—the temporary disorders of sensation (lightning pains, gastric crisis, &c.), he thinks are ordinarily benefited or cured after one or several courses of the spa treatment, though the more permanent disorders of sensation (girdle sensations, feelings of constriction, patches of hyperæsthesia and anæsthesia, &c.) do not yield so readily. During the second period the ataxy and other motor troubles become more and more resistant to the thermal treatment, and in the third period (that of great incoordination of movement) very little benefit can be derived from the spa. As contraindications Donadieu mentions rapidly progressive (malignant) tabes, signs of inflammation, and sudden fever. He considers as unsuitable that class of patients who become hyperæsthetic under the treatment, and on whom the baths exercise no sedative effect. The cases in which the diagnosis can be made early are the ones preferred for Lamalou. Mercurial cachexia, arthritism, and the

effects of overwork may be remedied by the spa treatment, and antisyphilitic treatment may in suitable cases be combined with the cure, or employed during the interval between two courses of treatment. (Abstract in Treatment, July 14, 1898.)

Tabes Dorsalis.—Perforating Ulcer of the Mouth in.

Letulle (*La Presse Médicale*, April 2, 1898) records such a case in a man, aged 51, in whom regurgitation of liquids through the right nostril had existed for five months. The teeth had fallen out freely, and the alveolar borders had atrophied. A perforation, involving the alveolar border and hard palate, passed up into the right middle meatus. The perforating area was cone-shaped, and was lined by pale, insensitive, but not ulcerated mucous membrane. There was some thickening and cicatrisation. Eight such cases have been collected by Baudet, who regards it as the result of tabetic trophic changes involving the region of the fifth nerve, the earlier changes being less shredding of the teeth and atrophy of the jaws. At first sight one is certainly inclined to ascribe it to syphilis, which existed in most of the cases. The condition may easily escape notice; Letulle's patient was not aware of anything being the matter; his mouth was examined because of the nasal twang of his voice, and, on being cross-examined he remembered that fluids had come through his right nostril. (From Dr. Rolleston's abstract in the Practitioner, 1898, p. 193.)

TETANY.—Treatment of.

It is evident from the obscurity which still exists with regard to the origin and nature of tetany that there can be no specific treatment. As what evidence there is, however, all seems to show that the disease is due to toxic poisoning of some sort, treatment may be directed to the prevention of the formation of toxic substances, and to their elimination, if already formed. It is probable that many of these toxins are absorbed from the alimentary tract and some from the respiratory tract. Others may be produced as the result of abnormal metabolism. The production of alimentary toxins can be best prevented by a suitable diet. Regulation of the diet is probably, therefore, the most important method of preventive treatment. Intestinal antiseptics may also be of use, and are, at any rate, worthy of a trial. The formation and absorption of respiratory toxins can be best prevented by a liberal supply of fresh air and sunlight. Anything which tends to improve the hygienic surroundings is of use. Elimination must naturally take place largely through the intestinal tract, and to a less extent through the kidneys and skin. Emetics, purgatives and lavage of the

stomach and colon tend, not only to favour elimination, but also to prevent the absorption of toxic substances already formed. The kidneys must be kept active by a liberal supply of water, and possibly by mild diuretics. The skin may be stimulated by proper hygienic measures. Symptomatic treatment is also important and consists largely in the avoidance of excitants of spasm and in the employment of antispasmodics. Excitants to be avoided are cold, handling, noise and excitement. Antispasmodic treatment may be local, by the use of such measures as warmth, warm baths, inunctions of oil and light massage, or general, by drugs. The bromides and chloral are the most useful, but opium, belladonna, valerian and musk may be tried. During convulsions chloroform or ether may be administered by inhalation. (From Dr. J. L. Morse's paper in the Journal of the American Medical Association, November 5, 1898.)

TORTICOLLIS, SPASMODIC.

Dr. Herbert J. Hall treats this affection with spring pressure. The clamp is very simple in construction and does practically what the thumb and fingers do in grasping the neck from behind. It is made of light spring steel, broader than, but otherwise similar to, the ordinary trousers-guards worn by bicyclists. There is a tail-piece running from the middle of the spring about six inches down the back. When the clothing is buttoned tightly over it, this tail-piece helps to keep the spring closely applied. A gentle pressure was thus exerted on the back and sides of the neck as far forward as the anterior borders of the sterno-mastoids. In one case a severe spasmodic torticollis of five months' standing was at once relieved, and has remained under control for two years by the simple expedient of spring pressure on the cervical muscles. For several weeks the spasm recurred on removal of the apparatus, but later no appliance was necessary. The affection was brought under control in spite of the existence of marked ocular defect. No drugs, no exercises, no massage or electricity, no complicated fixation apparatus were used in bringing about the desired result. Another case, a severe one of spasmodic torticollis of five weeks' duration, was somewhat relieved at once and in three months practically cured by the spring clamp, supplemented by a careful system of gymnastics designed to relax as well as to develop all muscles, and especially those of the neck. Very little attention was given to the development of the muscles directly opposed to those involved in the spasm. The exercises were designed to improve the general poise and to secure good muscular control throughout the body. (From Dr. Hall's paper in the Boston Medical and Surgical Journal, August 18, 1898.)

TRAUMATIC NERVOUS AFFECTIONS.

The following are Dr. Diller's conclusions:—(1) Nervous symptoms complained of as following severe accident are, while often exaggerated, usually very real. (2) Simulation is rare and easily detected by the skilled neurologist. (3) To successfully simulate nervous symptoms is a difficult task, possibly to only a few. (4) The symptoms in any case may be subjective wholly or chiefly. (5) The nervous symptoms set up are, as a rule, neurasthenic or hysterical, or both. (6) A certain number of cases suffer from symptoms not attributable to either of the above conditions. (7) An actual degeneration of the nerve-substance is sometimes set up, and may progress. (8) While there is a strong tendency to recovery in many of these cases, the prognosis, in not a few cases, is grave, and in still others quite hopeless. (9) While the physical element in most of these cases is powerful, there are others in which it plays a very minor rôle. (10) Any name used to describe these nervous affections carrying the idea that they constitute a morbid entity is undesirable. (11) Some name, *e.g.*, "traumatic neuroses," if used to mean any nervous affection following a traumatism, would be useful. (American Journal of Medical Science, September, 1898.)

TUMOURS, INTRACRANIAL.—Treatment of.

Dr. Ferrier (in the British Medical Association meeting, 1898) said that the percentage of operable cases, if one took into account the extreme views, varied between two per cent. and fifteen per cent. His opinion was that only seven per cent. were capable of being dealt with surgically. There were difficulties attending the operation, and cases had to be looked at from two points of view—(1) in reference to recovery; and (2) in reference to relief from the symptoms which were present before operation. In 55 cases of which he had particulars, operated on between January, 1896, and the present date, 20 died after a few days (37 per cent.); 16—*i.e.*, 29 per cent.—died within a year; 12—*i.e.*, 22 per cent.—passed out of the surgeon's hands; and seven were alive a year after operation—*i.e.*, 13 per cent. of what may be regarded as complete recovery. Further, of 38 cases treated surgically at the National Hospital for the Paralysed and Epileptic 15 per cent. died in a few hours, 35 per cent. died after some weeks, in 20 per cent. the result was uncertain, and in six cases life was prolonged over a year or more. On the whole cerebral surgery was beneficial in its results. The immediate mortality was not greater than in other severe operations, and the mortality could be appreciably diminished by operating, as Mr. Horsley had recently recommended, in two stages. (The Lancet, August 6, 1898.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

ANEURISM.

At the meeting of the Académie de Médicine, M. Lancereaux related the cases of two patients suffering from aneurism of the aorta, and of a third from aneurism of the right subclavian artery, all of whom were cured by subcutaneous injections of gelatine. The solution used contained thirty grains of gelatine for three ounces and a half (2 grammes for 100 grains) of artificial serum. He injected at one time from 10 to 12 ounces of the liquid, and renewed the injections as often as was necessary—that was to say, until the tumour disappeared. If those injections were of incontestable value in sacciform aneurisms, they failed completely when the artery was simply dilated (fusiform aneurism), as there one of the indispensable conditions to the deposit of the fibrine of the blood, that of retardation in the blood current, was absent. (Medical Press and Circular, October 19, 1898.)

ANGINA PECTORIS.—Treatment of.

There is a remedy which I believe will be found most valuable in relieving the attacks of angina, and that is oxygen by inhalation. Oxygen when properly diluted with another gas of lighter specific gravity is readily absorbed by the pulmonary capillaries ; and after it enters the circulation its first effect is to dilate the coronary arteries, and a normal amount of blood—saturated with oxygen—being thus added to the enfeebled organ the heart muscle is stimulated and strengthened, and its weakened action immediately overcome in the attacks of angina pectoris. The secondary action of the gas, which I have frequently tested, is to dilate every arteriole throughout the body and extremities. The most efficient formula now in use is that of the London Oxygen Hospital, and consists of two parts of pure oxygen, one part of nitrous monoxide, and one per cent. of ozone, to keep the mixture fresh when in the cylinder. Injurious and not beneficial results will follow the use of oxygen gas, unless it be wholly freed from chlorine and other deleterious gases always present in commercial oxygen. (From Dr. B. O. Kinnear's paper in the Medical Record, July 16, 1898).

AORTIC DISEASE, ACUTE.—Œdema of Lung in.

The definite treatment consists in the application of mustard plasters over the sternum, bleeding from the median basilic vein to the extent of five or six ounces, the inhalation of a few drops of sulphuric ether poured upon a handkerchief, hot applications to the trunk and to the lower extremities, and it

may be a hot foot-bath. Assure the patient, with an air of calmness and authority, that she will recover. It may also be advisable to inject hypodermically into the abdominal wall thirty to sixty minims of the following solution :—℞ Caffeine, 40 grains ; benzoate of sodium, 45 grains ; distilled water, 2½ drachms. In the way of nourishment small draughts of hot or cold milk may be given. Absolute rest in bed is to be insisted upon in some cases ; if the bowels are at all confined a mercurial purge will be of advantage. After the acute attack passes off the diet should consist of milk in small quantities given either hot or cold every two hours. An egg may also be given each day. Care should be taken during recovery that exercise is not resorted to too early.—From the *Presse Medicale*, March 5. (Therapeutic Gazette, 1898, p. 544.)

BRADYDIASTOLE.

Huchard (*Journal des Prat.*, October 30) discusses the significance of prolongation of the diastolic pause of the heart, which he terms Bradydiastole. The interval between the first and second sounds is much diminished, while that between the second and first is much increased. It is familiar in aortic regurgitation, and not infrequently seen in cerebral hemorrhage and the comatose condition. As a danger signal, it is an important guide when the muscle fibres of the myocardium are enfeebled so that they cannot contract effectively on the blood volume, and indicates the advent of passive dilatation of the heart. The associated abruptness of the systole is in itself an indication of cardiac enfeeblement. Bradydiastole is not uncommonly found at the approach of death, and in digitalis poisoning and asystole is a sign of supreme moment. In these last-named conditions Huchard regards the bradydiastolic rhythm, if persistent for several hours, as the sure harbinger of impending dissolution. Digitalis only serves to accentuate the disturbance by prolonging the diastolic pause of the heart. Bradydiastole, then, is a warning of impending dilatation, and a note of warning against the administration of digitalis, inasmuch as the condition is due to the heart receiving at each diastolic relaxation a greater quantity of blood than it has the power to expel in systole. The therapeutic indications are twofold—first, to deplete the over-filled heart chambers, and, if necessary, by venesection ; secondly, to brace up the flagging heart muscle by strychnine, sparteine, caffeine, and the like. (The Practitioner, November, 1898.)

ENDOCARDITIS, ACUTE.—Rest after.

How long should an actively diseased heart be spared? Can any rule be laid down for the length of time that such a person

should be kept in bed? In no case can one foretell the length of time to be passed in bed; each case must be studied on its own merits. Patients with the lightest cases do not invariably recover, the heart muscle being frequently weakened out of all proportion to the gravity of the manifest symptoms, as in the case here recorded. The temperature-chart does not give the best index to the gravity of the case. The study of the pulse in its force, its regularity, and its rapidity is a wiser course. Watch the effect on the pulse of effort, the difference between standing, walking, or lying down. Until the heart is able to bear up against the varying strain of these different conditions the affair may still be considered serious. If in doubt it is better to be over cautious. (From Dr. O'Donovan's paper in the Medical News, July 23, 1898.)

ENDOCARDITIS, MALIGNANT GONORRHŒAL.

A fatal case of ulcerative endocarditis following gonorrhœa is recorded by Ghon and Schlagenhaufer. The patient—a young girl—was admitted to hospital suffering from pains in the limbs and rigors. Acute inflammation was found in the urethra and in Bartholin's glands. Intermittent fever was followed by gangrene of the right foot. There was a basic systolic murmur. The patient sank rapidly and died on the sixth day after admission. Post-mortem.—Ulcerative endocarditis was found affecting the aortic valves and septic abscesses in the heart. The gangrene of the foot was due to an embolus in the femoral artery. The vagina, urethra, and cervix were affected with gonorrhœa. Gonococci were found in the heart lesions; these were cultivated and introduced into the human urethra. Many of the usual signs of malignant endocarditis were absent, such as septic emboli and enlargement of the spleen; also there was no gonorrhœal arthritis.—*Wien Klin. Woch.*, No. 24, 1898. (Treatment, July 28, 1898.)

GLYCOSURIA AND HEART DISEASE.

The association of glycosuria with organic cardiac disease seems to be little noted by writers of medical text-books, and certainly the condition is quite uncommon. By some it was considered possible that disturbed exchange of gases in the lungs would account for the condition, but cyanosis is too common a condition apart from glycosuria to render any such theory tenable. Within recent time no less than four cases have occurred in our clinic, while another case seen outside of hospital adds further to the number. In many cases of diabetes, minor and probably functional conditions of the heart muscle are doubtless quite common, and the lesion thus found will readily lead to the development of murmurs. In our own series of diabetic patients,

such a state has been not infrequently observed, but the condition scarcely comes under the category of organic disease of the heart. In other cases again of heart disease, there is a very transient glycosuria just as occurs in nervous diseases, malignant conditions and a variety of affections. Even this, however, in cardiac disease is rare, while the persistent presence of sugar in the urine is still more uncommon. [The full details of the cases are omitted here.] *Case* 1.—Myocarditis with hypertrophy of the heart and loss of compensation—persistent glycosuria—some obesity. *Case* 2.—Mitral endocarditis with enlargement of the heart—syncopal attacks—glycosuria. *Case* 3. —Enlarged heart—loss of compensation—persistent slight glycosuria. *Case* 4.—General arterio-sclerosis—aortic regurgitation—slight glycosuria. (From Dr. Martin's paper in the Montreal Medical Journal, August, 1898.)

HEART.—Acute Dilatation of in Rheumatic Fever. Dr. D. B. Lees, in a paper before the Royal Medico-Chirurgical Society, drew attention to the fact that an acute dilatation of the heart was a common occurrence in a rheumatic attack, even when arthritis and pyrexia were slight in amount, and apart from distinct endocarditis and from pericarditis; also that an acute dilatation might, in a more severe attack, intensify the signs and symptoms of pericarditis or endocarditis. The evidence adduced in support of these propositions consisted of tracings of the cardiac dulness at different stages of a rheumatic attack taken by Dr. Lees from patients under his care at St. Mary's Hospital. Tracings taken from the cases showing the size of the cardiac dulness at different periods were thrown on the screen by a lantern. The first three sets of tracings were taken from young adults suffering from subacute rheumatism, with slight arthritis and little pyrexia, with no evidence of pericarditis or distinct endocarditis. Three tracings of the cardiac dulness were shown from each of the cases, the first taken before commencing treatment, the second at an intermediate stage, and the third taken on recovery. They all showed the same events—a large extension of the dulness at first, with gradual reduction and final return to the normal. Next followed a set of tracings showing acute dilatation caused by a subacute attack in a heart already diseased by two previous attacks. The large extension of the cardiac dulness registered in the first diagram was seen to subside until it reached a permanent amount due to the previous disease. Lastly, a pair of tracings were shown from a case of rheumatic pericarditis with chorea, showing how acute dilatation may intensify the signs of pericarditis and how a rapid diminution in the area of the præcordial dulness may occur under treatment. It was

claimed that these tracings, though doubtless open to criticism in details, were sufficient to prove that acute dilatation of the heart was a feature of rheumatism which deserved more attention than it had hitherto received. (From Report in The Lancet, July 2, 1898.)

Heart.—Alcoholic Dilatation of.

Heavy drinking of short duration may cause acute failure of the heart's action. Slighter consumption daily, spread over a longer period (being always an excessive consumption), will produce a more persistent derangement. Two conditions chiefly arise, according to my own observations—one, of dilatation, which may occur fairly suddenly, the other being one of habitual and constant rapidity of the action of the heart, *i.e*, tachycardia. In both of these conditions there is an enfeeblement of the heart muscles, shown by the weakness of the systole, but in the latter form the condition would appear to be mostly one of faulty innervation. As to the treatment of the more acute cases with heart failure, I believe that repeated small doses of either calomel or blue pill and colocynth, followed by saline purgatives, are of great value, and the prolonged use of nux vomica or strychnine with ammonia and capsicum, with, if necessary, the addition of such direct cardiac stimulants as digitalis, strophanthus, and caffeine, are of the greatest benefit. Prolonged rest, in bad cases, and good feeding are also necessary. (From Dr. Tresilian's paper in the Edinburgh Medical Journal, June, 1898.)

Heart.—Syphilis of.

Dr. Adler relates a case and makes the following remarks :—It is evident that we have here a case of myocarditis with acute dilatation of heart and angina pectoris. There can be no doubt that the disease was of syphilitic origin. The absence of any arteriosclerotic symptoms, the simultaneous outbreak of fresh syphilitic lesions in sternum, ribs, and nerves, the failure of digitalis and other heart tonics to influence the condition, and the rapid and decided effect of the antisyphilitic treatment concur in corroborating this. It is worthy of note, too, that even larger doses of iodide of potassium seemed to have no effect, and the improvement commenced with the systematic use of mercurial inunctions. Until within a few days of the severe and acute outbreak the man had apparently been well and had never experienced any heart symptoms. But, nevertheless, and notwithstanding the occasional courses of inunctions and iodide in previous years, the myocarditic process had undoubtedly for a long time been slowly developing, though causing no symptoms until changes in the vessels and heart

muscles had been effected sufficient to produce this sudden breakdown of the cardiac functions. Reviewing, in conclusion, all these anatomical and clinical considerations, the necessity becomes apparent of methodically considering syphilis as an ætiological factor in heart disease. It may not happen very often that an absolutely positive diagnosis of heart syphilis can be established, but in every case in which the ætiology is not absolutely clear, and in which syphilis can not with reasonable certainty be excluded, the iodides and mercurial preparations should be accorded the same privileges as the digitalis and strophanthus, strychnine, and nitroglycerine. If carefully administered they can not do any more harm than these latter, and may do immeasurably more good. (New York Medical Journal, October 22, 1898.)

MITRAL STENOSIS AND PULMONARY TUBERCULOSIS.

The practical clinical significance of observations appears to me to be the following :—In any case presenting the physical signs of mitral stenosis the probability of the existence of or the advent of tuberculosis must be duly weighed. Some such cases present signs of marked anæmia, others incomplete development or faulty nutrition. In these the probability of tubercle is greater. Many cases of mitral stenosis, however, show signs which may be easily mistaken for those of pulmonary tuberculosis. They may manifest infraclavicular dulness with *râles* and auscultatory signs of lung consolidation ; by no means infrequently there is hæmoptysis, and hectic fever may accompany these conditions. Yet the signs and symptoms may be entirely independent of tubercle and due to embolisms of branches of the pulmonary artery, to which the subjects of mitral stenosis are prone. A case which simulates phthisis pulmonalis when mitral stenosis concurs is not of the grave significance of a case in which mitral stenosis is absent. The favourable prognosis must not be hazarded until a complete examination of the sputum has been made and bacilli have or have not been found. (From Dr. Sansom's paper in the British Medical Journal, June 21, 1898.)

PERICARDITIS.—Surgical Treatment of.

Brentano has reported five patients treated by opening up the pericardium, with resection of the ribs, which he considers necessary, as a single puncture will scarcely ever allow the evacuation of the entire amount of pus, and incision without the preliminary resection is much more dangerous and less effective. Pericardiotomy only promises success in acute cases. Two cases of suppurated pericarditis ended in death ; two cases

of long-existing serofibrinous pericarditis were only temporarily improved; but the fifth case was cured—a 10-year-old girl—pericarditis consecutive to rheumatic endocarditis.—*Deutsche Med. Woch.*, August 11. (Journal of American Medical Association, October 22, 1898.)

RHEUMATIC HEART DISEASE IN CHILDREN.

Aortic disease is rare. Regurgitation is usually very slight. A slight double murmur at the base is more probably due to pericarditis, and is then of great importance. Prognosis:—The prognosis may be said to depend not on the valvular lesions supposed to be present, but (1) on the amount of dilatation; (2) on the presence of pericarditis; on the presence of an active rheumatic toxæmia, as shown by sore throat, rheumatic nodules and chorea. (From Dr. Lee's paper read before the British Medical Association, 1898. Pediatrics, October 1, 1898.)

RUPTURE OF HEART, SPONTANEOUS.

Rupture of the heart is of rare occurrence, having been found but once in a series of two hundred autopsies. Those cases reported have occurred for the most part in old people from seventy to eighty years of age, and oftener in men than in women. By far the most frequent site of rupture is the left ventricle, more rarely the right, and very seldom the right or left auricle. The predisposing causes of heart rupture are fatty degeneration of the heart muscle, aneurism of the heart, syphilis, and abscess; unusually rare causes are neoplasms, hydatids, ulcerative endocarditis, hemorrhages, and certain local degenerations. Death, usually sudden without premonitory symptoms, may occasionally be preceded by general weakness, difficult respiration, sensation of distress in the chest, and then complete suffocation, without its being possible to recognize the cause. In other cases several days elapse before death, during which period there may be a marked improvement of the symptoms just mentioned. The diagnosis, necessarily very difficult, may be possible in the form that lasts for some days. The therapy, at best of little avail, consists of proper position of the patient, the application of ice-bags, and injections of morphine.—*Progrès Médical.* (Medical Age, October 25, 1898.)

VENA CAVA, INFERIOR.—Obstruction of.

Dr. Wardrop Griffith described and contrasted two such specimens before the Leeds and West Riding Medico-Chirurgical Society. In one the cause was aneurism at the bifurcation of the aorta, with first pressure on, and then communication

with, the cava. The superficial abdominal veins were greatly enlarged. In the second example, occurring in a man who had died after an operation on the bladder, no symptoms were present during life. The obstruction was complete, and just above the junction of the renals. In this instance the collateral circulation was carried on entirely without the assistance of the superficial veins of the abdomen ; this fact was accounted for by the obstruction having occurred so early that the developing vena cava—a late vessel to appear—had not fully taken over the functions of the cardinals, which therefore remained as unusually large azygos veins. (British Medical Journal, December 3, 1898.)

WOUNDS OF THE HEART, SUTURE OF.

According to the *Supplemento et Polyclinico*, August 20, and quoted by *The Lancet*, a remarkable case of penetrating wound of the heart occurred this past summer at Rome, Italy. On July 9, 1898, Dr. Parlavecchio reported to a medical society at Rome a case of punctured wound of the heart in which he had operated eight hours after the infliction of the wound, and saved the patient's life. The patient, a man 20 years of age, two days previously, was stabbed with a knife in the fifth intercostal space, in a vertical line midway between the border of the sternum and the left nipple. He afterwards walked to the hospital, a distance of 218 yards. Five hours later he was found to be suffering from pneumothorax on the left side, with extensive effusion, probably of blood, into the pleural cavity ; the area of cardiac dulness was increased ; at the apex the heart sounds were confused, and at the base they seemed distant ; the pulse was irregular, intermittent, and small. Dr. Parlavecchio suspected a wound of the heart, or at least a wound of the pericardium, and proceeded to operate as soon as possible, although delayed in his preparations till eight hours after the injury. Chloroform was given and a free incision made in the fifth intercostal space, through which much blood escaped on opening into the pleura. Upon resection of the fifth rib a wound admitting two fingers was found in the pericardium. This was enlarged to expose the heart, in which a V-shaped wound, one and one-half inches long, was discovered near the apex, penetrating obliquely the left ventricle, and intermittently discharging blood. Four interrupted deep silk sutures were applied, which completely controlled the hemorrhage. The pericardial and intercostal wounds were then sutured, the entire procedure lasting forty minutes. The subsequent history of the case was uneventful, the patient insisting on leaving the hospital August 14, five days after the operation. (From a leading article in the Medical News, October 8, 1898.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

ADHESIONS, COMBINED PLEURAL AND PERICARDIAL.

Dr. Taylor concludes with the following propositions :—(1) that while the combination of pleural and pericardial adhesions is by no means uncommon, a few cases are distinguished by features which render diagnosis somewhat difficult ; (2) that some such cases form part of a larger group in which the peritoneum and mediastinal connective tissue are also involved in the inflammatory process ; (3) that these features referred to are especially the prominence of the signs of past or present pleuritic changes and the insignificance of the local evidences of cardiac disease ; (4) that such patients nevertheless do die chiefly from the incapacity of the heart, with increasing œdema and ascites, and this incapacity chiefly arises on the right side ; (5) that in some cases peritonitis may have an important share in the fatal result ; and (6) that in some cases ascites occurs as an early symptom and gives rise, with the passive enlargement of the liver, to suspicions of cirrhosis. (The Lancet, October 29, 1898.)

BRONCHITIS.—The Treatment of.

Under this title Dr. H. Quincke, of Kiel (*Berliner Klin. Woch.*), has recently offered a contribution of considerable interest. Starting with the principle that wherever there is a collection of pus recovery is best facilitated by its rapid removal, he relates some experiences in treating chronic bronchitis with slight bronchiectasis, by means of certain changes in the ordinary posture of the patient. Having noted that many of these patients coughed a little during the day, scarcely any in the first half of the night, but towards morning in the early hours had persistent cough with profuse purulent expectoration, he decided that this course indicated that the secretion had slowly collected in the bronchi and lower lobes, and that the tendency to cough occurred only when there had been a decided accumulation of secretion. His treatment consisted in having his patient lie flat on a couch, from six to eight o'clock in the morning, and again during the same period in the evening. After a few days the lower end of the bed was raised from eight to ten inches, so as to incline the axis of the body toward the head, thus facilitating freer expectoration. In selected cases this procedure often in a week produced an appreciable and after two to four weeks a very decided diminution of the secretion, such as one often observes after evacuating abscesses and pleural empyemas. This procedure is satisfactory for those cases of chronic bronchitis where there has occurred cylindrical

or sack-shaped dilatation in the lower lobes; it was of no value in the case of diffuse, especially fresh, bronchitis, with a regular general secretion. (Medical Age, July 25, 1898.)

CROUP, PNEUMOCOCCIC.

Seuvre reported to the Société Médicale de Reims (Séance of January 14, *Revue Mensuelle des Maladies de l'Enfance*, March, 1898, p. 157) the case of a child of eight years, who, during an attack of influenza, manifested an erythematous angina. Laryngeal stenosis rapidly supervened, and, despite the injection of Roux's antitoxin, called for tracheotomy on the evening of the same day. The wound gave issue to a false membrane of colloid appearance, which gave a pure culture of the pneumococcus. The case recovered. (American Journal of Medical Science.)

HAY FEVER.

Dr. Strangways has obtained gratifying results with resorcin in hay fever, but stipulates that it is quite necessary to remove the diseased conditions in the nose, for by this means often the attack can be aborted and possibly cured when his proposed nasal wash is made use of. He advises frequent washing with the following solution:—℞ Acetic acid, about 2 minims; resorcin, 120 milligrammes (about 1½ grains); common salt, 260 milligrammes (about 4 grains); water, 30 c.c. (about 1 fluid ounce). Accompanying this frequent washing, hydrochloric acid is prescribed internally. (Practitioner, October, 1898.)

INJECTIONS, INTRATRACHEAL.

In an article on Inflammations, before the American Laryngological Association, Dr. Thompson states that by intratracheal injections we get the direct action of the remedy on the diseased area. There were many proofs that tracheal injections were speedily absorbed, and they had the advantage of not being changed by the digestive processes as they were when taken into the stomach. The cure of a bronchitis by such direct medication, without interfering with digestion or appetite, was a distinct advance in therapeutics. In tuberculosis there was a mixed infection—a secondary infection with the germs of suppuration. A little menthol injected into a trachea would give greater and more prolonged relief than a large dose of morphine given by mouth. The remedies should be soluble in the vehicle employed, the solutions should not be very irritating, and the drugs so used should be capable of volatilising slowly at the temperature of the body. He had first become convinced of the great value of this method by observing its excellent

results in pulmonary tuberculosis and chronic bronchitis. Where the remedies were not irritating it was not necessary to use cocaine previously. He used from one drachm to four drachms at a sitting, and ordinarily there was but little coughing or strangling.—*Journal de Laryngologie.* (Medical Age, June 10, 1898.)

IODOFORM IN PHTHISIS.

Dr. J. W. Russell (*Birmingham Medical Journal*, June, 1898) analyses 123 cases. The great majority of these cases have been treated with large and rapidly increasing doses of iodoform. Dr. Russell began usually with two grain doses three times daily, and increased by two grains per dose every week until a maximum of ten grains three times a day was reached. Ninety-eight of the 123 patients attended for a total period of over a month, 31 attended for more than ten weeks, six reached a total attendance of over thirty weeks ; only five failed to reach a maximum dose of fifteen grains per diem. He claims, therefore, that his patients have been placed pretty fully under the influence of the drug. In analysing the cases Dr. Russell takes five principal lines:—(1) *Physical signs.*—There are only 51 cases treated with iodoform in which the notes are available for a statement on this point. In 14 of these, with a total attendance varying from four to eighteen weeks, the physical signs appeared to remain stationary. In 22 cases there was steady extension of the mischief as shown by physical signs. In the remaining 15 cases there was some improvement, mostly taking the form of a diminution in, or even disappearance of, the moist sounds. (2) *Hæmoptysis.*—In the iodoform cases, hæmoptysis occurred one or more times during attendance in 21·1 per cent. of the cases. (3) *Cough and night sweats.*—Dr. Russell thinks his notes scarcely confirm the somewhat enthusiastic statements of previous authors as to the efficacy of iodoform in this respect. (4) *Weight.*—Probably the most important test of the value of any line of treatment in phthisis lies in the alteration in weight which takes place under its influence. It would appear that, when compared in this manner, the iodoform cases present only a slight superiority, containing 5·3 per cent. more gains in weight, and 3·8 per cent. fewer losses than their opponents. But on comparing the respective weights of the patients at the end of a fixed period, the iodoform cases show 8·9 per cent. more gains, and 11·1 per cent. fewer losses than those not so treated—a decidedly better result. In the iodoform cases in which the patients attended for the longest periods of time the best results were recorded. (5) *Subjective improvement.*—By periodically changing the treatment, and noting the effect of the change, he has been able to

get testimony strongly in favour of iodoform. Dr. Russell refers to the toxic symptoms which are unfortunately not uncommon. Out of 269 patients treated with the drug, 28 complained at one time or another of the unpleasant taste and smell produced, and 12 of sickness. Two suffered from amblyopia. In conclusion, Dr. Russell states his belief that in a certain number of cases better results can be obtained by means of iodoform than by the ordinary tonic and symptomatic line of treatment. (From Dr. F. J. H. Coutts's abstract in the Medical Chronicle, September, 1898.)

LARYNGEAL TUBERCULOSIS.—The Treatment of Dysphagia in.

In the *Journ., Laryngol*, London, September, 1898, Dr. Eugene Yonge, of Manchester, reviews the various drugs which have been employed in the treatment of dysphagia in phthisical cases. The relief to be obtained from this painful symptom depends largely upon the selection of a suitable local anæsthetic, a substance which will be prolonged in its action, devoid of marked toxicity, not specially disagreeable to the taste, and not costly. He carefully tested a series of fifteen local anæsthetics, and while he found no ideal drug of this class applicable to every case, he found the following suitable and generally effective under various circumstances:—Cocaine, antipyrin, eucaine, orthoform, carbolic acid, guaiacol, morphia, and para-monochlorphenol. In the application of these drugs, it must be borne in mind that the absence of ulceration of the mucous surface is a contra-indication to the use of orthoform, guaiacol, and morphia, as they fail to produce anæsthesia when the mucous membrane is intact. The author found that antipyrin maintained its anæsthetic action for a longer time than cocaine, and the quantity required was never sufficient to give rise to toxic symptoms. A mixture of cocaine and antipyrin or of cocaine and carbolic acid was found useful when the drug had to be used for considerable periods, the total effect of the cocaine being strengthened without a corresponding increase of that substance. Iced solutions of 5 per cent. cocaine appeared to be at least double the strength of the same solution at the ordinary temperature. Eucaine, while less toxic than cocaine, was found weaker, and was indicated when some idiosyncrasy debarred the use of cocaine. Orthoform, a comparatively new local anæsthetic (Einhorn and Heinz, *München. med. Wchnschr.*, 1897) is non-toxic, and in conjunction with its prolonged action it possesses very considerable advantages over cocaine in ulcerations of mucous surfaces. Guaiacol, with or without menthol in combination, had a sedative and antiseptic action in mild degrees of ulceration. The author preferred rectal feeding, in

exceptionally severe dysphagia, to the œsophageal tube, which caused so much distress and disturbance to the parts during its passage. (From abstract in the Edinburgh Medical Journal, November, 1898.)

PHTHISIS.—Prevention of.

I would suggest that in the treatment of this question we should begin in a tentative way. The sanitary authorities, in all our larger towns at all events, should be granted powers to enable them to treat phthisis in the same manner as any of the specific infectious diseases. Dispensary doctors and hospital physicians should be invited to notify every case that comes under their charge, giving particulars which will render identification as easy as possible. Leaflets should be widely distributed, pointing out the nature of the disease and the best means of preventing its spread. Hospital authorities should be prohibited treating cases of pulmonary phthisis in general wards, and endeavours made to induce them to open special wards for such cases. Houses and rooms which had been inhabited by persons suffering from the disease should be thoroughly disinfected before being again occupied, and every facility should be offered for thorough sterilisation of bedding, furniture, and clothes which had been exposed to infection. Spitting about the floors of public conveyances and halls should be prohibited by law, and public spittoons established wherever it might be thought desirable. Children suffering from tuberculosis even in the earliest stages should be excluded from ordinary national schools, and every practicable means adopted with a view of isolating them from other healthy children. (From Dr. Kirkpatrick's paper in the Dublin Journal of Medical Science, September, 1898.)

PHTHISIS.—Symptomatic Treatment of.

(1) *Fever.*—Extended investigations have been made as to the effect of all the well-known antipyretic drugs in reducing fever in tuberculosis. Neither antipyrin, phenacetin, acetanilide, quinine, nor other similar drug, appears to have any permanently beneficial effect on the course of the temperature, while with general treatment a subsidence of fever will often follow. (2) Fever is often accompanied by a troublesome symptom—namely, sweating at night. In such cases the temperature and ventilation of the bedroom and the amount of the bed clothes must be regulated. When profuse perspirations occur, changing the night-dress, rubbing the patient down with a dry towel, and the administration of some food and stimulant, are useful measures to employ. There are various remedies which are

more or less successful in checking night sweats. Oxide of zinc in doses of 5 grains in pill form, half a grain of the extract or 15 minims of the tincture of belladonna (B.P. 1885), $\frac{1}{100}$ gr. of atropine, half a grain of extract of nux vomica, $\frac{1}{10}$ gr. of strychnine, $\frac{1}{12}$ gr. of agaricin, $\frac{1}{60}$ gr. of picrotoxin and 20 grains of camphoric acid, are among the remedies that have been found useful. They may be given either singly or in combination. I generally commence with oxide of zinc, which, on the whole, I have found the most satisfactory. (3) *Hæmoptysis.*—It must be borne in mind that in most cases hæmoptysis tends to subside of its own accord, and that quiet and rest are what, as a rule, the patient most requires. A hypodermic injection of morphia (gr. $\frac{1}{4}$) will generally fulfil all the indications. The diet should be plain and no stimulants should be allowed. Hæmostatics such as hamamelis and ergot are sometimes employed. It is difficult to explain how they act, and it is likely that the esteem in which they are held is due to the natural cessation of the hemorrhage already referred to. Tincture of hamamelis is used in doses of 20 to 60 minims, and ergot is best given in the form of hypodermic injection (1 or 2 grains of ergotin in solution). When the bleeding is profuse and continued, sometimes depressants such as antimony may be cautiously given, a dose of $\frac{1}{60}$ gr. being repeated every half-hour until some effect is produced. (4) *Cough.*—Space will permit only a very brief reference to the treatment of this frequent and troublesome complication of pulmonary tuberculosis. Our endeavour to treat the cough must be guided by a knowledge of the condition on which the cough depends. If there is active secretion from the bronchi or from the walls of cavities, or if breaking down of lung tissue is going on, expectoration is a necessity. In such cases opiates should be avoided, and in all cases they should be given with great care. Cough mixtures and linctus are generally apt to spoil the appetite, and remedies should be as simple as possible. Lozenges of gum acacia and liquorice are much used at the Brompton Hospital. Certain dry inhalations given on inhalation respirators are very useful where the cough depends on an irritable condition of the mucous membrane. Twenty drops of a saturated alcoholic solution of menthol, or a similar quantity of a mixture consisting of equal parts of creosote or guaiacol and spirit of chloroform are examples of dry inhalations which have been found useful. Menthol is also often used in the form of a lozenge or pastille. When there is laryngeal catarrh the use of a steam inhaler containing a drachm of compound tincture of benzoin to a pint of water at 140° F. sometimes affords relief. When there is excessive secretion, belladonna or codeine may be cautiously tried. (From Dr. Hector Mackenzie's paper in the Practitioner, June, 1898).

PHYSICAL SIGNS SOMETIMES OVERLOOKED.

In many cases the physical signs are markedly reduced, especially the *râles*, by deep inspiration and failure to expire freely. In a few incipient and slight cases this trick may hide all symptoms. The patient should be taught to expire profoundly. The diagnostic value of extreme expiration is not confined to the production of *râles* by the undisturbed flow of air through the narrowed air channels. Sometimes, if the patient will voluntarily cough at the end of such an expiration, *râles* will most unexpectedly be brought out. Early in most cases of unilateral, localised tuberculosis there is greater cough during recumbency on the affected side, due to the tendency of the phlegm to run down into the smaller bronchi. Of course, as soon as the lesion extends to the lateral periphery of the lung, or if it should happen to begin there, this test will fail. It rarely fails from this region in an incipient case ; it fails more often from the paucity of secretion. It is not unusual for this symptom to be pronounced early in a case, and the reverse symptom to be present later when the air channels of the periphery become full of muco-pus. A striking tendency to error in considering chest signs is shown in cases of fluid in the pleural cavity in little children. Dulness on percussion is a sign in pleural effusions ; but in small children there is little or no dulness over the lower part of the chest, especially on the left side ; gas in the stomach or bowels almost completely masks this sign. If the pleural cavity is full to the apex, there is dulness, even flatness, at the top, which by absence of dulness low down leads to the eroneous theory of apical consolidation of the lung. The books make a fatally false statement when they say that the intercostal spaces bulge. They only do this when the pleura is tense nearly to bursting. They should say that the intercostal spaces are less depressible and more firm. Though lung sounds are not much transmitted through fluid, in a child's pleural cavity, faint bronchial breathing is heard. This fact, with the absence of bulging spaces, leads many astray. (From Dr. Norman Bridge's paper in the Boston Medical and Surgical Journal, August 4, 1898.)

PNEUMONIA.—Serum Treatment of.

The Rome correspondent of *The Lancet* writes :—"Of the medical congresses now drawing to a close none have equalled in importance and interest that recently held at Turin, if only for the discussion it evoked on the 'Siero Antipneumonico' devised by Professor De Renzi and Professor Pane of the Naples school and prepared by them for distribution at the 'Istituto Sieroterapico' of that city. After exhaustive experiments on animals these authors proceeded to inject their serum in

a patient suffering from typical pneumonia and at once witnessed a perceptible abatement of the temperature, an easier and fuller respiration, a marked extension of the sound lung, the pulse and the arterial pressure being more accentuated, the heart gaining strength and the right ventricle completely emptying. The physiognomic signs told a similar tale and the patient felt such general relief as to crave for 'another injection.' In the discussion which followed Professor Pane's paper, Professors Maragliano, Murri, Bozzolo, Cantieri, Bordoni, Queirolo, and Silvestrini, and many others hardly less distinguished took part, when the Neapolitan physicians, in answer to objections and interrogations, were able to adduce confirmatory cures by their serum of aggravated senile pneumonia, of pregnant women suffering from the same disease, and of patients with pneumonia complicated with various forms of cachexia. Among the most gratifying testimonies to its virtues was that of Dr. Belfanti, director of the Istituto Sieroterapico of Milan, who confessed that he had not been able to isolate a pneumococcus so virulent as that of Pane and De Renzi. He had just succeeded in preparing a bactericidal and preventive serum, but not a curative one or such as would prove effective in cases of pneumonia. Professor Bozzolo added his own experience to that of the able Milanese bacteriologist, and contributed to justify the expectation of the Congress that pneumonia will ere long cease to hold a formidable place in the roll of diseases." (From The Lancet leaderette, October 22, 1898.)

PNEUMONIA.—Suppurative Parotitis in Acute.

Osler says that parotitis, as a complication of pneumonia is an "excessive rarity." He refers to a case mentioned by Traube, and reports the only case he has ever seen. Dr. A. J. Hamilton has also reported a case. Osler's case was fatal. Hamilton's patient recovered. The following case embraces my entire experience with this very rare complication of pneumonia :— Resolution was well advanced on the twelfth day, in the case of a man aged 22, when he was seized with severe pain in the region of the right parotid gland. I was sent for and found the gland hot, swollen and tender. His temperature had risen from 100° to 105° F. He had successive chills, and suffered great pain. His temperature for the following four days rarely fell below 104° F. The patient was sent to St. Vincent's Hospital on the following day and placed under the care of Dr. N. Stone Scott, who made multiple deep incisions into the inflamed gland and scraped out a quantity of gangrenous gland tissue, and irrigated and packed the cavities. The outlook was indeed gloomy, but he made a prompt rally and an uneventful

recovery. (From Dr. C. J. Aldrich's paper in the Medical News). [Recently we have seen a case of parotitis complicating acute pneumonia, but the patient died.—E.F.T.]

PULMONARY CAVITIES.—Incision and Drainage of. At a meeting of the Royal Academy of Medicine of Turin, reported in the *Gazzetta degli Ospedali*, of July 17, Dr. Bozzolo described two cases of successful surgical treatment of tuberculous cavities of the lung. One of the patients was a boy, 11 years of age, who in August, 1897, was found to be suffering from a cavity in the lower part of the right lung, and on whom an operation was performed by Professor Carle in the following December on account of threatening pulmonary gangrene. The Roentgen rays showed that the heart was displaced to the left, and that the base of the thorax was dark, as if from localised empyema, but exploratory punctures gave no result. At the operation pleural adhesions were found, the lung was dense, and the cavity was deep and was situated higher than percussion seemed to indicate. The cavity was drained; the patient recovered rapidly, and is now quite well. The second case was that of a man, 36 years of age, a brother of whom had died from tuberculosis. In March, 1897, he suffered from cough, fever, bronchial catarrh, weakness, and emaciation, and could lie only on his left side or on his back. There was a cavity in his right lung, and his expectoration was purulent, but Koch's bacilli were not found. The lung was incised, but no adhesions were met with, and the man nearly died from pneumo-thorax succeeding the operation. Two months afterwards a larger and higher incision was made, firm adhesions being encountered. Exploratory punctures after many attempts resulted in the discovery of a small cavity containing pus, situated at some depth and communicating with another larger one. Drainage was followed by complete recovery. Both of these patients were present at the meeting. (Leaderette in The Lancet, August 6, 1898.)

PULMONARY GANGRENE.—Treatment of. This treatment is founded on antisepsis (editorial in *Journal de Méd. de Paris*, September 18). The patient should be placed in a large room and the air disinfected with phenicated spray. To disinfect the lungs, give one of the following potions in teaspoonfuls during the twenty-four hours: No. 1, alcoholatum eucalypti 2 gms, julep with syrup of poppies (julep diacodé) 120 gms. Or No. 2, Labarraque's solution 4 gms., sodium hyposulphite 4 gms., julep 120 gms. Antiseptic inhalations are also very useful: phenic acid 50 gms., water 950 gms. Put in a bottle and inhale the vapours. Trousseau recommends essence

of turpentine. Pour a few teaspoonfuls of the spirits in hot water and inhale. Jaccoud recommends for internal antisepsis: 50 cgms. salicylic acid during the day. Tonics of all kinds should be used *larga manu*, with digitalis and caffeine when collapse threatens. If there are several foci, medical treatment is all that is possible, but if the gangrene is circumscribed and this treatment is ineffectual, pneumotomy and drainage are indicated. The part of the lung involved has been resected in some cases with satisfactory results. (Journal of the American Medical Association, October 29, 1898.)

AFFECTIONS OF THE DIGESTIVE SYSTEM.

APPENDICITIS.

In the treatment of appendicitis I have found the local application of ice more satisfactory than hot poultices or fomentations, in relieving the pain and limiting the inflammation. It may be applied by means of a Leiter's coil, or in a rubber bag suspended over the patient in such a way as to partially take off the weight, or the ice may be pounded up and rolled in a large towel and then laid over the region of the appendix. I believe that fewer cases would come to require operation if cold instead of heat were more generally used as a local application. (Dr. Geo. E. Armstrong in the Montreal Medical Journal, 1898.)

BISMUTH SUBNITRATE.

Fleiner has stated that large doses of subnitrate of bismuth greatly reduce the amount of free hydrochloric acid in the gastric juice of patients suffering from gastric ulcer and excessive acidity. This diminution of gastric juice has been noted by other observers, but not in such a systematic way as to decide the question of its practical value in such cases. Olivetti (*Therap. Monatsh.*, Berlin, April, 1898) has made observations on two cases of gastric ulcer with acidity, and on two cases of excessive hydrochloric acid secretion, giving from 150 to 300 grs. of the bismuth salt early in the morning on an empty stomach. Test meals were given at intervals, and the conditions carefully investigated. As a result, he comes to the following conclusions:—(1) Large doses of bismuth subnitrate greatly improve the symptoms in these cases, both at the time and afterwards. (2) This improvement is not lasting, but is both more marked and more lasting in cases of ulcer than in cases of acidity. (3) The best dose is from 150 to 225 grs., given once a day before breakfast. (4) Larger doses have apparently no better effect than these. (5) In acidity the secretion of HCl

is very little influenced, and the slight decrease which is often observable cannot account for the lessening of pain and vomiting which is seen as a result of giving bismuth. The explanation is more probably to be found in the bismuth salt forming a coating over the ulcer, and protecting it mechanically. (Abstract in the Edinburgh Medical Journal, June, 1898.)

CATARRH, CHRONIC GASTRIC.—Lavage of the Stomach in.

Caporali (*Rif. Med.*, August 4, 1898) draws attention to the value of lavage of the stomach with solution of zinc sulphate in cases of gastric catarrh where there is an excess of mucus. The usefulness of sulphate of zinc in other chronic catarrhal conditions led the author to try it in chronic gastric catarrh. From 0·10 to 0·8 g. in a litre of distilled water were passed into the empty stomach every morning, followed by a final lavage with a 2 per cent. solution of carbonate of soda, so as to change any remaining sulphate of zinc into the innocuous carbonate. The author has tried this method of treatment in five cases of chronic gastric catarrh with hyper-secretion of mucus with satisfactory results. In three other cases where there was no excess of mucus the sulphate of zinc lavage had no effect. (Epitome, British Medical Journal, October 22, 1898.)

CHOLEDOCHOTOMY.

Hr. Riedel, Jena, reported on the results in Czerny's clinic, where more perfect technique had gradually improved. But as the operation offered no great difficulties there were other grounds for the improved results, and these lay in the nature of the cases. In the first case the operations were carried out on patients with infected bile. Before operation it could not be said with certainty whether the bile was infected or not. Infection took place when the calculus was too long impacted in the duct. If choledochotomy was performed in these cases the conditions were not found unfavourable, but symptoms of peritonitis appeared suddenly, the sutures had not held, and the patients succumbed. The infected bile was turbid, and contained multitudes of micro-organisms. Non-infective bile did not set up peritonitis. The only sign that the bile was infected was that between the different attacks the patients were still suffering. Such patients could not be helped; they died with or without operation. (Medical Press, July 13, 1898.)

COLIC.—Treatment of Hepatic by Methyl Salicylate applied externally.

Dr. Hénon concludes that:—(1) To ensure success it is necessary to apply the remedy as early as possible, immediately the

patient complains of a feeling of weight in the right hypochondrium, or one detects tenderness or swelling in the region of the gall-bladder. (2) One may, without inconvenience, apply to the skin 6 to 8 grammes (℥i.ss. to ℥ii.) in twenty-four hours. The drug is painted on, and a layer of impermeable tissue applied. (3) Relief commences half an hour after application, and is very marked at the end of an hour. (4) Salicylate of methyl is free from the drawbacks of morphine, and it has not the depressing effect of salicylate of soda. (Treatment, October 29, 1898.)

CONDURANGO AS A GASTRIC ANALGESIC.

The pain accompanying ulcer and cancer of the stomach, &c., can be quieted by administering five to eight pills a day containing ten centigrams each of condurango bark. It often prolongs the life of the patient by facilitating alimentation. Lemoine believes that the condurango, like coca leaves, contains some alkaloid or glucoside, which exerts an analgesic action upon the gastric mucous membrane. It has almost invariably relieved his patients during an experience of several years.—*Semaine Méd.*, May 18. (Journal of the American Medical Association, July 2, 1898.)

CREOSOTE IN GASTRIC AFFECTIONS.

Zanger of Zurich (*Correspondenzblatt für Schweizerische Aerzte*) believes that the beneficial effect of creosote in phthisis is due to its action on the stomach, causing it to do its work better and so to improve the nourishment of the system. He finds that in many cases of purely gastric affections, with or without diarrhœa, or other intestinal symptoms, minute doses of creosote will often succeed when other remedies have failed. In the gastroenteritis of children and in the vomiting of pregnancy, he has been greatly struck with its effects. The doses he gives vary from $\frac{1}{10}$ gr. in children to $\frac{1}{3}$ gr. in adults. He prescribes it with enough spirit to dissolve it in a spoonful of water, with or without water. Black coffee or mint tea may be employed, if necessary, to disguise the taste. When infantile diarrhœa exists, without vomiting, he has often found creosote valuable. In the milder forms of the vomiting of pregnancy small doses of creosote have always produced an improvement, and he thinks that even in severe cases a trial of the same treatment should be made.—*Public Health*, August. (Journal of the American Medical Association, October 8, 1898.)

DUODENUM, MALIGNANT DISEASE OF THE.

This appears to be very rare, for in 42,000 autopsies at Vienna it was only met with seven times; there were 3,583 cases of

cancer in this large collection of examinations, and of these 443 were in the intestines. Schlesinger (*Wiener klin. Woch.*, 1898, No. 10, p. 245), from whom these figures are taken, records a case of cancer involving the second part of the duodenum and giving rise to jaundice and vomiting, but not narrowing the lumen of the bowel. An anomalous case where the same part of the duodenum was the seat of a columnar-celled carcinoma is described by Mauclaire and Durrieux (*Bull. Soc. Anat.*, Paris, April, 1898). The growth extended three-quarters round the circumference of the bowel, and appears to have obliterated the biliary papilla, but without producing jaundice. It obstructed the lumen and gave rise to acute obstruction, which, during life, was diagnosed as peritonitis, secondary to cancer, of some part of the intestine. There was no peritonitis, however, and it is remarkable that in spite of the obstruction there was no dilatation of the duodenum or stomach, and that the pylorus was normal. No tumour could be felt during life, and the liver appeared natural, though it was afterwards found to contain secondary growths. (Practitioner, 1898, p. 196.)

DYSENTERY.—Treatment of.

Lately I have trusted a great deal to enemata, on the grounds that the disease is at its onset local, and should be attacked by local remedies, and also that we now know that the amœbæ can be destroyed by antiseptic solutions, such as quinine, 1 in 5,000 (Lösch). I used to employ nitrate of silver, but now prefer sulphate of copper. I will now quote very briefly notes of the only four cases which I have had under treatment during the first half of 1898. I must first state that all cases were treated in the usual way as regards rigid rest in bed, with compulsory use of the bedpan, and that the abdomen was swathed in cotton wool and flannel belt. The anus was kept clean, and a cocaine suppository was used when the enema caused pain. The food was chiefly rice water, boiled milk, lime water, and soda water with brandy in small doses if necessary. (From Dr. F. M. Sandwith's paper in the British Medical Journal, September 24, 1898.)

HEMORRHOIDS.—The Treatment of.

Dr. Zuckerkandl (*Wiener medizinische Presse*) recommends Dittel's elastic ligature, after employing it with good result in 269 cases, as a simple and radical means. General anæsthesia is not necessary; the Schleich infiltration anæsthesia suffices to deaden the pain. The operation is applicable only for internal hemorrhoids with prolapse of the mucous membrane. By pressing, the patient forces the masses as far out as possible; then with a polyp forceps curved on the flat and directed by the

index finger of the left hand the pedicle is grasped and the forceps are twisted to an angle of ninety degrees. This procedure develops the hemorrhoid, which is then tied off with tensely stretched elastic ligatures. Three or four such ligatures are sufficient. After from eight to ten days the ligated masses necrose and fall off, leaving a clean granulating wound, which heals in as many more days. (Medical Record, June 25, 1898.)

HYDROTHERAPY IN STOMACH DISEASES.

Dr. George D. Kahlo said that water is essential to the performance of all physiological functions; yet its importance as a remedial agent is not so generally recognised. While he does not wish to be understood as opposing entirely the use of drugs in diseases of the stomach, he desired to say that he believes water ranks first among therapeutical resources. It may be used internally as a drink, in lavage, as a douche, and as a spray, and externally either applied locally or generally. Its effects, when administered internally, depend upon the conditions of the stomach in respect both to taking of food and whether or not there is normal digestion, as also upon the amount and temperature of the water ingested. Cold applications of all kinds are antiphlogistic, and when prolonged are sedative. They are indicated in acute gastritis and in the control of vomiting and hæmatemesis, but to obtain their full effect it is necessary that their local condition produce an active hyperæmia of the skin. Hot applications are useful in the treatment of gastralgia, hyperæsthesia, gastric ulcer, and chronic gastritis. While he does not ignore the beneficial influence of such agencies as diet, exercise, massage, and electricity, not to speak of a few of the more important drugs which are thus used, and in obstinate cases especially, physicians are not likely to rely wholly upon any one remedy, however valuable. To be successful, hydrotherapy, like all other forms of treatment, has for its governing factors an exact diagnosis, a thorough knowledge of the patient, a full understanding of the causative influence and a clear conception of the effects of the remedial agent. To this must be added the confidence and co-operation of the patient. (From Report of Mississipi Valley Medical Association in the Medical News, October 29, 1898.)

INTUSSUSCEPTION.

Mr. W. H. Brown (Leeds) records a case successfully treated by operation and appends the following remarks:—In a recent number of *The Lancet* there appeared notes of two cases of intussusception treated by early operation; as the details were very similar I venture to add the above case to the scanty

records of successes. If more evidence in favour of early operation be needful I venture to think it would be forthcoming if surgeons were less reticent in publishing isolated cases. The condition of the bowel at the initial point of invagination showed that a few hours' more delay would have resulted in sloughing, for the swollen patches which were in contact were very suggestive of destructive pressure. I have only once seen an intussusception undergo spontaneous cure, and this after weeks of great suffering. Unfortunately, operation is resorted to only after a prolonged trial of palliative measures has failed. I think it would be a good rule to regard cases of intussusception in the light of strangulated herniæ and treat accordingly. If the risk of abdominal section is great the risk of leaving invaginated bowel is greater. I have on many occasions had to operate only to find sloughing intestine, and then the necessary manipulations, either to restore the continuity of the canal or the formation of the artificial anus, call for a prolongation of the operation which is rarely compatible with life. (The Lancet, August 20, 1898.)

IODINE IN INFANTILE GASTRO-ENTERIC DISORDERS.

Grosch (*Riforma medica*, September 14) says that the effects of the tincture of iodine in gastro-enteric complaints of children are very rapid, and, while less so in adults, they are nevertheless very certain. The fever and diarrhœa cease, the sensorium recovers. the headache is alleviated. To children it is given in doses of from two to four drops in sugar water every eight hours for three days; to adults are given six drops three or four times a day. In acute infective gastro-intestinal catarrh a tablespoonful of the following mixture is given once or twice in the twelve hours :—℞ Tincture of iodine, 15 to 18 drops; simple syrup, 300 drops; distilled water, 2,250 drops; M. (New York Medical Journal, November 5, 1898.)

LIVER.—Aspiration of the.

Surgeon-Colonel W. F. Stevenson, Professor of Surgery at the Army Medical School at Netley, England, comments in a letter to *The Lancet* of May 21, on remarks published by Surgeon-Lieutenant-Colonel Hatch in the *Indian Medical Gazette* for April, as to the possibility of aspiration of the liver producing fatal hemorrhage into the peritoneal cavity. Professor Stevenson, while indorsing the danger of incautious aspiration, can not agree with *The Lancet* in recommending its abandonment altogether, on the ground that the operation offers no advantages to compensate for its undoubted risk. Dr. Stevenson contends that its certain evidence as a diagnostic sign where positive

results are found, and its almost certain evidence where negative results are obtained from puncture in three or four situations, are really great advantages, for, "the books notwithstanding, there are no symptoms or physical signs on which the surgeon can depend for indicating the necessity for operation in cases of suspected abscess of the liver." He has treated over one hundred cases in which abscess of the liver was present or suspected, and his routine plan has been to aspirate first at one or more points, and then to operate on a positive result being obtained. No evil effect was ever noticed in cases where pus was not found. While a certain amount of danger must be admitted as existing, he thinks that it is altogether infinitesimal in comparison with the number of cases treated. (New York Medical Journal, June 11, 1898.)

OBSTRUCTION, INTESTINAL.—Location of.

Reed (*Jour. Amer. Med. Assoc.*, April 30, 1898) says that the old method of finding collapsed bowel and following it upward in order to locate a point of obstruction in the intestines is often unreliable, for the reason that collapsed bowel may be found above the obstruction as well as below it. When the sense of touch is depended upon to locate the stricture, it is advisable to pass the hand first into the left inguinal region in order to exclude hernia and see if the sigmoid flexure is collapsed. If so, the hand is next passed into the right inguinal region, and if the cæcum is collapsed the difficulty must be in the small intestine. This may be turned out and the obstruction found, but a simpler and a safer method is what may be properly termed a a "colour-guide." At the seat of strangulation congestion exists, which deepens and extends further along the bowel the longer the exciting cause continues. If one loop after another of distended intestine is brought into view at the bottom of the abdominal incision and their appearance carefully noted, a clue will shortly be found to the point of obstruction by following in the direction in which the colour grows deeper. (Medical News, June 11, 1898).

PERFORATION, ILIAC, IN A CHILD.

M. Kirmisson, at a meeting of the Surgical Society of Paris (*La Presse Médicale*), reports a case of peritonitis in a child of eight years of age. An examination under chloroform demonstrated a localised collection of fluid. He performed a laparotomy and found a perforation in the knuckle of the ileum, which he sutured. The child made a good recovery. In this case there were no symptoms of a perforation, and M. Kirmisson was led to examine the intestines in seeking a cause for the peritonitis. (Dublin Journal of Medical Science, July, 1898.)

PERITONITIS, ACUTE SEPTIC.

If I were to set down the symptoms of acute septic peritonitis in a tabular form, I should do so in the following manner :—

General.	*Local.*
Quick pulse, with tendency to grow quicker.	Impaired mobility of abdomen.
Restlessness, with later supine posture.	Tenderness.
Raised temperature, which may become sub-normal.	Pain.
Small coated tongue.	Localised induration or fulness.
Vomiting.	Swelling and tympanites.
Constipation.	Free fluid or gas.
	Rigidity of abdomen and fixation of coils of intestine.

For such is the order of their constancy, and therefore to some extent of their relative value. I cannot imagine a case of acute septic peritonitis without a quick pulse and impaired mobility of the abdominal wall, unless there is some other condition sufficiently powerful to prevent the pulse from quickening as it ought to do. (From Mr. Butlin's paper in the St. Bartholomew's Hospital Journal, 1898.)

Peritonitis, Acute Septic,—Treatment of.

In nearly all of my cases I adopted the complete operation of McCosh. The chief points are adequate incisions, removal of the cause, withdrawal of the intestinal coils, constant irrigation, drainage free with gauze or rubber tubes and gauze. The regions of the pelvis, liver, and spleen need special attention. This complete operation demands plenty of assistance and much care in preliminaries. Many operations for septic peritonitis are of little use; there is far too often haste in preparation and small thought for the essentials. Unless all the careful detail can be attended to by complete equipment and trained assistants the operation may do more harm than good. In my experience this radical and thorough attempt at removal of the infection will be borne astonishingly well by the patient, provided the intestinal coils are kept warm and handled carefully and if every detail of operation and stimulation is provided. The use of subcutaneous salt solution during and after the operation I have found of great value. (From Dr. F. Cobb's paper in the Boston Medical and Surgical Journal, September 8, 1898.)

Peritonitis, Chronic Serous.

In the *Archiv f. Kinderkleukk*, Bd. 25, Prof. Filatoff denies that the disease is always tuberculous, as in a case he describes, in which operation was of no value and in which attempted inoculation of a guinea pig was also unsuccessful. He endeavours to establish a distinction between what he calls simple serous

peritonitis and the chronic tuberculous form. In the simple form the general condition does not suffer so much as in the tuberculous. The patient does not emaciate so much. Inspiration and palpation of the abdomen are decisive. Considerable tension and an oval form of the abdomen are distinctive of the tuberculous disease, certain spots are tender on pressure, and here and there indications can be felt through the abdominal walls, most frequently between the scrobiculus cordis and the umbilicus. Moreover, fluctuation can be distinguished, as in the tuberculous disease attachments form early between loops of intestine and between these and the abdominal wall. Whence it comes that on change of position the dulness is not always in the most dependent part. The sole symptoms of simple serous peritonitis is a considerable ascites, all the other signs being negative. The abdominal walls are not distended and painful, the shape is that of simple ascites; when induration and adhesions are not present, the dulness is always in the lowest part. The patient has a good appetite, there is no pyrexia, at least in the early stages. The bowels act regularly, and the patient may be on his feet for months, in spite of the ascites, whilst tuberculous peritonitis leads to progressive exhaustion of the system, and if left to itself ends fatally in from six to twelve months, chronic serous peritonitis remains stationary two to three months, almost always to end in recovery. (Medical Press and Circular, November 2, 1898.)

Peritonitis.—Laparotomy in.

Dr. Parker Syms (*Deut. med. Woch.*, 1898, No. 16) draws the following practical conclusions:—(1) The danger of the operation is very slight (3 per cent.). (2) Infection is less likely to occur than in a healthy peritoneum. (3) Tubercular infection of the wound itself is never observed. (4) It is unnecessary to use any antiseptic for flushing the peritoneum, or to insert a drainage tube. (5) The operation, even if unsuccessful, does not aggravate the condition of the patient. (6) Tubercular lesions in the lungs are rather an indication for operation than otherwise, since the general condition of the patient is usually so much improved by this procedure. (From abstract in Medical Chronicle, August, 1898.)

PYLOROPLASTY AND GASTRO-ENTEROSTOMY.

The results of pyloroplasty may be summarised:—(1) Regurgitation of bile into the stomach is prevented. (2) Secretion of hydrochloric acid, when it has been excessive, becomes normal. (3) If the secretion of hydrochloric acid has been diminished or absent before operation, it remains in *statu quo* after operation. (4) If there has been primary gastric atony, peristalsis is but

little improved. (5) This function improves rapidly or reaches perfection if the muscular contractility has been normal or increased, and when the obstruction was due to fibrous stenosis or pyloric spasm. (6) In all such cases (as No. 5) evacuation of of the stomach is accomplished in its physiological period. Only in rare cases, and these only in the first months, post-operation, may it be delayed. (7) Capacity of stomach always decreases, but rarely becomes as small as normal. (8) The pylorus recovers tone. Points of difference between results of pyloroplasty and gastro-enterostomy are—(1) The absence of regurgitation of bile, and hence the absence of any possible biliary influence on the gastric secretions. (2) Evacuation of stomach is not accelerated, hence the difficulty the stomach has in reaching its normal size. (3) The slight or negative result obtained by pyloroplasty in obstruction from primary gastric atony compared to the positive results from posterior gastro-enterostomy. Pyloroplasty is too dangerous in cases where there is extensive, severe hardening of the tissues, much peripyloritis and adhesions to liver, gall-bladder, the colon, &c., and in cases of duodenal stenosis. Pyloroplasty is indicated in cases of spasmodic stenosis, and in slight annular stenosis from ulceration accompanied by muscular hypertrophy. (From John F. Binnie's editorial article in the Annals of Surgery, June, 1898.)

STOMACH DISEASE.—Rest in.

Professor Saundby did not think that either the profession or the public quite appreciated the value of rest in the treatment of diseases of the stomach. Rest in bed and massage frequently afforded the best means of cure in such cases. Patients with slight gastric ailments were often ordered to take whisky with their meals. Whisky, however, was an irritant, and therefore should be avoided. The diagnosis of gastric ulcer from anæmic gastralgia was often exceedingly difficult; indeed, it was almost impossible in many instances unless accompanied with hæmatemesis. Anæmic gastralgic patients and those with gastric ulcer rapidly recovered if kept in bed. It was often difficult to say which was which; but the treatment was the same for both. As to diet, nutritive enemata were necessary only where there was hæmatemesis; in other cases food might always be given by the mouth, beginning with milk and barley water, 1 ounce every hour, and gradually increasing the diet by the addition of bread, minced meat, &c., up to ordinary food, which could be reached in about three weeks. Medicinally the sulphates of iron and magnesium, sulphuric acid, and peppermint water, *secundum artem*, were beneficial as a tonic aperient. Of the many cases of gastric ulcer treated by him, only one or at most two had ended fatally; the result in the others had

been most satisfactory and successful. (British Medical Journal, October 29, 1898.)

TONSILS, LATENT TUBERCULOSIS OF.

The following conclusions, I think, are justifiable :—(1) That the tonsils instead of being almost immune from tuberculous disease are very frequently affected ; (2) that tubercle may be primary in the tonsil ; (3) that the tonsils are very frequently affected secondarily in persons suffering from chronic pulmonary tuberculosis ; (4) that when the tonsils are tuberculous the cervical glands receiving the lymphatics from these organs are also frequently affected with tubercle : (5) that the follicular glands at the base of the tongue are rarely found tuberculous ; and (6) that the tonsils may be affected from without or through the blood stream in acute miliary tuberculosis. (From Dr. Hugh Walshaw's paper in The Lancet, June 18, 1898.)

TUBERCULOSIS, INTESTINAL.—The Surgical Treatment of.

The *Journal of the American Medical Association*, May 21, 1898, contains a useful paper by Dr. N. Senn, which collates the facts referring to this comparatively novel question. It is only primary and localised intestinal tuberculosis which can be considered suitable for operation. The first method of treatment mentioned is laparotomy and the application of iodoform. It is not strange that this procedure, which has been found successful in peritoneal tuberculosis, should prove efficacious in intestinal. Dr. Senn has no doubt that the use of iodoform is of value in tuberculous peritonitis, for recovery in one case followed its use where laparotomy and drainage had twice failed. To return to intestinal disease. In the case of a child recorded by Nové-Josseraud the cæcum and colon, which were extensively affected, were dusted with iodoform and recovery resulted. Enteroplasty (similar to pyloroplasty of Heineke-Mikulicz for pyloric stenosis) for stricture following the healing of solitary tuberculous ulcer has been successful (Péan). Enterectomy has been performed for intestinal tuberculosis, and in well selected cases yields good results. In one case Dr. Senn resected the cæcum and 18 inches of the ileum and performed lateral anastomosis with the aid of decalcified bone-plates. The patient recovered, but died six months later from recurrence. But in some cases resection may be too severe an operation ; then entero-anastomosis may be performed. It relieves the intestinal obstruction caused by cicatricial stenosis and secures rest for the affected part. In a boy, aged sixteen years, with acute obstruction Dr. Senn performed ileoileostomy. The patient recovered and was in almost perfect health two years afterwards. In several cases

of tuberculosis of the cæcum entero-anastomosis has been successfully performed by different surgeons. (Leaderette in Lancet, July 30, 1898.)

ULCER, GASTRIC.—The Treatment of.

M. Frèmont regards gastric hyperacidity as the principal causative factor. The first indication is to relieve the gastric juice of its digestive activity. For this two methods, which are readily combined, present themselves:—Milk fixes the hydrochloric acid; the alkalies neutralise it. The neutralised juice does not digest. The second indication is to cover the surface of the ulcer so as to prevent contact with the gastric juice. To neutralise a fluid which is constantly being secreted frequent doses are necessary. For instance, two or three tablespoonfuls of warm (100·4° F.) milk are given every thirty minutes for twenty consecutive hours, to which a grain of calcined magnesia, a grain of prepared chalk, two grains of bismuth sub-nitrate, and four grains of sodium bicarbonate are added. During the remaining four hours of the night this dose is given every hour The amount may even be increased if the pain is not relieved. If there is repeated hemorrhage, ice should not be given internally, but an ice-bag upon the stomach is beneficial.—*Bulletin Général de Thérapeutique*, 1898, 23e liv., p. 909. (American Journal of Medical Science, November, 1898.)

AFFECTIONS OF URINARY AND GENERATIVE SYSTEMS.

BRIGHT'S DISEASE.—Iron in.

Dr. James Tyson said that while speaking of the treatment of chronic interstitial nephritis in 1880, he stated that iron was indispensable and might be given in the form of the acetate or of Basham's mixture. Since that time he had changed his opinion, and thought that in many cases the iron had done considerable mischief in Bright's disease. Not every case of Bright's disease is anæmic, and iron has no specific curative effect and is clearly not indicated in non-anæmic cases. It is harmful, as it checks the secretions and eliminations already restricted by a diminished function of the kidneys. It may be laid down as a rule with scarcely any exceptions, that iron is not indicated and should not be given in acute Bright's disease. Iron is contraindicated in chronic interstitial nephritis. Iron is more promptly and dangerously harmful in this than in any other form of Bright's disease. Iron is best borne in chronic parenchymatous nephritis, especially as this form is more likely

to be associated with anæmia. Even here doses are given in too large amounts. If iron appears in the fæces, this unabsorbed portion is useless, and this portion acts as an astringent and causes constipation. He did not think that Basham's mixture acted as a diuretic except from the amount of water that it contained. (Boston Medical and Surgical Journal, July 28, 1898).

CHANCRE.—Treatment of Soft.

Unna (*Monats f. prakt. Derm.*, 26, 6) describes a treatment for soft chancres which has proved very successful in many cases. The ulcer and the surrounding skin is first washed over with soap and water, and then with perchloride lotion. After this cleansing process is completed the chancre is frozen with chlorethyl, and the superficial layer of the chancre is removed with a sharp razor. The hemorrhage is controlled by touching the raw surface with a stick of nitrate of silver. The wound is covered with iodoform powder, and a zinc oxide plaster is next applied. The plaster is renewed every twenty-four hours. The treatment is usually continued for four or five days, and at the end of this time the chancre has healed. (Epitome, British Medical Journal, July 23, 1898.)

HÆMATURIA.

The hæmostatic action of gelatine has been remarked by several clinicians in cases of metrorrhagia, epistaxis, hæmatemesis due to round ulcer, &c. Four cases of hæmaturia due to neoplasm of the bladder have been treated in a similar way by M. Guyon with success, as far as regarded the object in view. The solution the Professor used was composed of one drachm of gelatine dissolved in four ounces of a solution of chloride of sodium at 7 per 100. At the time of using, the mixture was liquefied in a sand bath, and after washing out the bladder with a solution of boric acid, it was injected and allowed to remain permanently in contact with the bleeding surface. (Medical Press and Circular, September 7, 1898.)

MORPHINE IN BRIGHT'S DISEASE.

Osler writes concerning uræmia: "For the restlessness and delirium morphia is indispensable. Since its recommendation by Stephen Mackenzie in uræmic states, some years ago, I have used this remedy extensively and can speak of its great value in these cases. I have never seen ill effects or any tendency to coma follow." My observations entirely confirm these statements, and yet the use of morphia in Bright's disease is denounced with little less than horror by most practitioners,

though they all confess that they have never tried it, that, indeed, they dare not do so. Morphia hypodermically employed is of conspicuous benefit in the shortness of breath of uræmia. This may be due to different causes. With some patients the compensatory hypertrophy gives way and they suffer from cardiac dyspnœa, in all respects similar to that from valvular defects with insufficient compensations, notably, sleep in aortic regurgitation. The paroxysmal shortness of breath prevents sleep; on falling asleep they are soon wakened by distress of breathing. This distressing condition, whether due to deficient compensation, in Bright's disease or to valvular defects, is almost invariably relieved by hypodermic injection of morphia, and several hours' refreshing sleep are secured, to the great relief and comfort of the patient. Morphia can scarcely be too highly recommended in such a condition. Uræmic asthma, again, yields promptly to hypodermic injection of morphia. On the other hand, persistent distress of breathing may be due to dropsy, the lung being hampered by an abundant serous effusion into the cavity of the chest. I need hardly say that such a condition is not improved by the use of morphia. The headache and sleeplessness occurring in uræmic patients can generally be removed by the hypodermic injection of morphia. (From Dr. Sydney Ringe's paper in the Journal of the American Medical Association, October 8, 1898.)

ORCHITIS, ULCERATIVE, IN TYPHOID FEVER.

Dr. A. Breton, of Dijon (*Journal des practiciens*, September 3), relates the case of a lad, 17 years old, who was attacked with typhoid fever late in July, 1897, and became convalescent toward the close of August. At that time, however, he was seized with severe fever and testicular pain, and suppuration took place rapidly. On October 26 he came under Dr. Breton's observation. There was an ulcer on the right side of the scrotum about as large as a franc piece, and by the side of it there was a very small opening of a sinus. The surrounding skin was violaceous, and the general aspect of the lesion was that of a tuberculous ulcer. However, he did not react to an injection of tuberculin. The parenchyma of the testicle was involved, but the epididymis and the spermatic cord were healthy, and there was no effusion into the tunica vaginalis. The lymphatic glands of the right groin were enlarged. Four days of antiseptic treatment proved of no avail, and then the diseased portion of the testicle was excised. The remainder of the gland was perfectly healthy. The wound healed in a week and the cure was complete. There were no Koch bacilli in the excised tissue, but there were a few bacilli which the

author is inclined to look upon as those of Eberth, although the examination did not determine positively that they were not specimens of the *Bacillus colli communis.* (New York Medical Journal, October 8, 1898.)

PROSTATE.—Enlargement of.

(By Dr. L. B. Bangs, *Medical News*, February 12, 1898.) Cases of prostatic trouble may be broadly grouped into those in which there is more or less power of micturition and those in which there is complete retention. In the latter cases it is especially important when introducing the instrument to avoid minute traumatisms of the prostatic urethra. The suffering caused by the passage of the instrument may at first be very severe, but may be modified by the use of eucaine solution. Twenty or thirty minims of a 4 to 8 per cent. solution should be injected. Eucaine is slower in its action than cocaine, and from six to eight minutes should be allowed for its absorption. The congestion of the prostate may be reduced by hot antiseptic irrigation and by gentle massage of the gland. Subsequently a weak solution of nitrate of silver (1 in 5,000, gradually increased in strength) may be applied to the deep urethra. The question of prolonged drainage of the bladder should only be considered in the early stage of the disease in those cases where the bladder has become infected by septic material. When the introduction of the catheter has become painless the patient should be carefully instructed in the principles which govern the maintenance of a sterile bladder. When there is commencing decomposition of the urine, the author speaks highly of the administration of benzosol in doses of two or three grains every two hours. This drug is usually well borne, does not set free carbolic acid like salol, and in the intestine is transformed in guaiacol and benzoic acid. The introduction of solution of nitrate of silver (1 in 1,000) into the bladder sometimes checks commencing cystitis. In cases where there is a certain degree of spontaneous urination, the use of a catheter must depend upon the amount of residual urine. If the residual urine is small in quantity, and if the bladder does not resent its presence, the use of the catheter is unnecessary; but if the urine changes in quality, and especially if there are obscure pains over the sacrum or in the pelvis, an instrument should be used. Where there is cystitis the bladder should be washed out sufficiently frequently to keep the patient comfortable. Special attention should be paid to the disinfection of the catheter. (From Mr. Platt's abstract in the Medical Chronicle, June, 1898.)

TUBERCULOSIS, RENAL.

By M. Tuffier. Operation may be called for by the urgency of one or other of the chief symptoms, hæmaturia, pain, and so forth, but, as a general rule, it is the cumulative evidence, subjective and objective, upon which intervention is founded. Nephrotomy, nephrectomy, partial or complete, and combined or not with a removal of the upper portion of the ureter, are practised. In one case Trendelenburg successfully removed the kidney, ureter, and a portion of the bladder, but hardy operations of this kind are of doubtful utility, and are better left in "splendid isolation." (British Medical Journal, October 1, 1898.)

URETHRITIS, CHRONIC POSTERIOR.

The following line of local treatment is strongly advised as being applicable in all cases of chronic posterior urethritis :— For ten days or two weeks total irrigation of the urethra with silver solutions—1 : 6000 during first week, 1 : 4000 in the second week. If practicable, these irrigations should be employed daily ; where this cannot be accomplished, one treatment every four days will answer. In the third week pass a sound every four days, and follow by irrigation of silver 1 : 2000. Continue the regular passage of sounds, increasing in size up to 28 or 30 F., every four days, for a period of from three to four weeks. Irrigate the urethra after each introduction of the sound. Where prostate is involved, supplement the above treatment by stripping of the gland per rectum once a week. This is most essential to success. Under such a course of treatment one can confidently expect a cure in almost all cases in from six to ten weeks. One important point should always be borne in mind, viz., where the symptoms are increased and the local condition made worse by treatment it must be at once suspended for a time. (From Dr. Christian's paper in the Therapeutic Gazette, August 15, 1898.)

URIC ACIDÆMIA.—Treatment of.

If the condition is marked, there is no remedy that has given me results comparable to salicylate of soda. Salicylates made from the natural acid are more palatable, and less disturbing to the digestion. Small doses, highly diluted, and repeated not more than twice or three times a day, are sufficient, unless true gouty symptoms arrive. In such cases, if the salicylates are given until they evoke their physiological effects, as good results are obtained as by the use of colchicum or other remedies. There are innumerable alkaline mineral waters that are exploited as specifics They are no more specifics than is any solution of

alkalies in water. My personal preference is for Vichy, either the imported or the Saratoga Vichy. The habitual use of this or of the milder Apollinaris is to be commended to those who can afford it. (From Dr. J. L. Heffron's paper in the Medical News, July 2, 1898.)

URINE.—Retention in Boys.

The causes are usually due to the impaction of a stone in the urethra, but may be due to a spasmodic condition. In the latter case a hot bath or hot enema will often be sufficient to procure relief, and if not there will be no difficulty in passing a small soft catheter. If a calculus is present it is likely to be near the meatus or in the scrotal part of the urethra, these being narrow parts of the passage. As the urethra is very delicate and sensitive an anæsthetic should be given. Then if the stone is near the meatus, incise that orifice downwards, and, after injecting some warm oil with a syringe, make gentle endeavours to extract the stone with a Lister's sinus forceps, or some other narrow-bladed forceps, until successful. If the stone is in the penile urethra, but in front of the scrotum, a clean incision should be made on to the stone from the under surface, and the wound closed afterwards by sutures. Should the stone be in the scrotal part of the urethra, or behind the scrotum, it will be best to inject oil, and then, with a No. 5 or 6 gum elastic or silver catheter, gently tap the stone until it recedes into the bladder, where it can be crushed with a lithotrite and evacuated. If the lithotrity has to be postponed, the patient must pass urine lying on his back, to avoid re-impaction. (From Dr. J. Lacy Firth's paper in The Hospital, October 8, 1898.)

UROTROPIN IN URINARY DISEASE.

From observations made, it seems fair to present the following conclusions :—(1) Urotropin produces no untoward symptoms when administered in amounts of 30 grains per diem. (2) It renders an alkaline urine acid no matter what the cause may be. (3) It inhibits the development of the micro-organisms of ammoniacal cystitis, and in this way clears up cloudy urine. (4) It is indicated as a preparatory disinfectant in operations upon the urinary tract ; in pyelitis, cystitis, and other inflammation of the urinary tract irrespective of their cause in phosphaturia, and in other conditions tending to formation of urinary calculi. (From Dr. W. R. Wilcox's paper in the Medical News, November 12, 1898.)

GENERAL SURGERY, AND AFFECTIONS OF THE BONES, JOINTS, &c.

ALBUMINURICS, OPERATIONS UPON.

Dr. Mongour (*Le Scalpel*, June 19) has investigated the question of operations in the presence of albuminuria. Surgeons do not agree on this question; some few declare that they pay no attention to this condition; others have fixed an arbitrary quantity of albumin (generally from five to six grams to the litre), in excess of which quantity they do not operate; again, some institute a course of medical treatment and do intervene until the albuminuria falls within the prescribed amount. Dr. Mongour divides this class of patients into three categories: — (1) Albuminuria, constituting the only symptom of renal lesion, is no contra-indication for operations. (2) Albuminuria, whatever may be the quantity, co-existing with signs of Bright's disease (auditory and visual troubles, vertigo, &c.), is a formal indication for reducing to a minimum the work of the kidneys by prescribing a milk diet. If under this treatment functional signs disappear, any intervention is legitimate. If, on the other hand, there is no improvement, we should abstain from all operative interference unless immediate death threatens. (3) Albuminuria, whatever may be the quantity, existing in conjunction with marked signs of renal insufficiency (œdema, ascites, &c.), if coming on in the course of a subacute nephritis, precludes operation until after treatment has been undergone. If the results are favourable intervention is legitimate, otherwise no operation should be undertaken, unless it is a question of life or death. In this category of patients the author makes one reservation—cases in which nephritis is accompanied by all the classical signs of Bright's disease, which seems to be daily aggravated by a suppurative lesion. (Medical Record, September 17, 1898.)

ANÆSTHESIA.

Dr. H. A. Hare was very much impressed, as a surgical layman, with two instruments used—that is, the mouth-gag and tongue-forceps. He had seen very few cases in which ether had been given in which it was necessary to use either of these especially horrible instruments, and he had seen patients torn and bleeding from the way in which the tongue had been brought out, and no one with any knowledge of anatomy of the tongue could conceive of such force being employed, as is at times, without grave injury resulting to the tongue thereafter. He had never seen a case in which he thought the mouth-gag was necessary; he had seen cases, on the contrary, where the jaws were so

widely opened that the tongue fell into the back of the throat more readily than if the mouth had been kept shut, as people know who sleep with their mouths open. (From Dr. Hare's paper in the Annals of Surgery, August, 1898.)

CELLULOID BANDAGES.

Dr. Walravens (*Annales de la Société belge de chirurgie*, June 15) advocates the substitution for plaster, starch, silicate, &c., of bandages stiffened with a solution of celluloid as recommended (*Centralblatt für Chirurgie*, 1896, No. 29) by Landerer and Kirsch, on account of their greater lightness, solidity, elasticity, impermeability, and durability. These bandages are not affected by urine, pus, &c., and can be washed. They can be moulded by warmth. As to inflammability, the author says he has many times purposely thrown them on the stove, and has never known them catch fire, but simply melt. Naturally, if they are brought to a flame, they catch fire just as clothes do. As to the impermeability to perspiration, that is easily remedied by a few perforations, which do not interfere with the strength of the splint. The solution of celluloid is made by dissolving one part of celluloid in three parts of acetone. It should be thin enough to trickle from the spatula, and pure acetone is desirable as evaporating more quickly and giving a more homogeneous solution. The application is as follows:—The part is firmly bound by layers of gauze bandage, to which the celluloid solution is then applied. A fresh bandage is next applied, and in its turn is soaked with the solution, and so on until the desired thickness is attained. The author, however, prefers to soak his bandage first in the acetone and then in the celluloid. He then applies them to the part and paints one or two layers of celluloid solution thereon. The celluloid dissolves also in a mixture of alcohol and ether, but the results are not so satisfactory as those of the solution in acetone. The hands should be smeared with vaseline while handling the acetone. (New York Medical Journal, July 2, 1898.)

FRACTURE OF CLAVICLE.

Treatment in these cases is usually very simple. If the fragments be prominent, an attempt may be made to push them into position by pressure. This was done in several cases, and was, I think, attended with benefit. In carrying out this procedure care should be taken to avoid making the fracture complete; for, as has been pointed out by J. B. Roberts, "over-zealous attempts at straightening may cause a greater degree of deformity by separating the fragments." An axillary pad can be dispensed with; but in all cases it is advisable to place a thin layer of cotton-wool in the axilla to prevent the

skin-surfaces from coming in contact. The treatment adopted in all cases was the fixing of the arm to the side by means of bandages or strapping. Usually the arm was kept at rest for about 14 days. *Results.*—More or less thickening of the bone from callus is almost invariably present for some time after the injury. Most of my patients were lost sight of soon after the removal of the supports, and hence in only two cases was I able to keep the child under observation until the absorption of the callus was complete. In one of these the prominence of the bone had disappeared seven weeks after the accident; in the other, absorption was complete at the end of three months. (From Mr. Platt's paper in the Medical Chronicle, October, 1898).

GLOVES FOR OPERATION.

Hr. Döderlein, Tubingen, said his experiments had shown that non-waterproof gloves got soaked through during operation. After 100 laparotomies and numerous vaginal operations the gloves were examined for bacteria and enormous quantities were found. The wetter they were the more bacteria, especially when they were soaked with blood. When they got soft the microbes settled on them and went through. Pervious gloves, therefore, should not be used, and covering them with paraffin made no difference. He then tried india-rubber gloves. Here the number of micro-organisms on the gloves was far less, but there was no security under the gloves, for the skin under the gloves became soft and macerated, and was soon in a favourable condition for the passage of the micro-organisms from the lower layers of the skin outwards. Practically the results of the investigation were as follows :—Thread gloves capture bacteria and hold them fast. A change of the gloves leads to nothing. It is very difficult to sterilise the hands after operation. India-rubber gloves protect the skin of the hands from external infection, but we operate the freest from germs when we operate with the naked hand made free from germs, and when during the operation we keep them free from them by washing them in sterilised salt and water. It is time to free ourselves from pessimism as regards sterilisation of hands, and to regain our confidence in the possibility of such sterilisation. (Medical Press and Circular, May 18, 1898.)

HIP DISEASE.—Treatment of.

Drs. Gibney, Waterman and Reynolds draw the following deductions :—(1) Hygienic and constitutional measures exert a powerful influence in the control of the disease. (2) The early diagnosis of hip-joint disease represents a very important factor in attaining a successful ultimate result. (3) During the

acute stage, rest in bed, associated with the usual mechanical appliances, is preferable to ambulatory treatment. (4) In the first stage it is essential to procure absolute immobilisation by fixation and traction (extension), and also to furnish protection to the joint. (5) In the second stage the deformity must be corrected, and operative procedures resorted to if mechanical methods fail after a reasonable length of time,—usually six months. (6) Early correction of the deformity is advised, using as little force as is consistent with the individual case. (7) Adduction with flexion is the deformity which most frequently calls for correction. (8) Flexion without adduction rarely requires correction. (9) Forcible correction, followed by fixation, should be tried before attempting reposition by femoral osteotomy. (10) Where there is absolute ankylosis or only a few degrees of motion, and all manifestations incident to an acute condition have subsided, the operation of subtrochanteric osteotomy for the correction of the deformity is indicated, supplemented, if necessary, by tenotomy, myotomy, and fasciotomy. (11) The injection of various chemical substances into abscesses and sinuses has not proved beneficial. (12) When an abscess does not disappear after repeated aspirations, radical operative procedures are clearly indicated, to be followed, if necessary, by resection of the joint. (13) When the disease is complicated by pus-formation in young children, more especially in the first years of life, there is less need of fearing a poor result than in adults, as the former frequently recover with a movable joint, a condition which may be explained by the fact that the head of the bone at this time is cartilaginous. (14) Long-standing and profuse suppuration retards the process of reparation and gives rise to a great prognosis ; furthermore, the absorption of pus is associated with great danger, and frequently results in acute septicæmia and amyloid degeneration. (15) Treatment should be continued not only during the acute and subacute stages, but also during the convalescent period. (Annals of Surgery, October, 1898).

JOINTS, GONORRHŒAL INFLAMMATIONS OF.

Mühsam reports on forty-one cases treated in the Moabit Hospital in Berlin. In thirty, the affection was monoarticular ; in the others, several joints were affected. Fifteen recovered with complete mobility, twelve were improved, that is to say, the joint effusion readily relapsed ; seven resulted in ankylosis ; in three the affected joint had to be resected ; amputation of the thigh was required in one case, on account of suppuration in the knee-joint ; one died with symptoms of sepsis six weeks after the commencement of the gonorrhœa ; both wrists and one ankle were affected ; nothing characteristic was found on post-

mortem examination. Although always looked for, the gonococcus was only found in the joint effusion in four cases. As regards treatment, absolute immobilisation is the most satisfactory ; where there is effusion into the joint, the latter may be punctured and irrigated.—*Centralbl. f. Chir.*, Leipzig, July 30, 1898. (Edinburgh Medical Journal, September, 1898.)

SPINAL CARIES.—Treatment of.

The conclusion is that we should give up treatment by rest only, and substitute treatment by early operation and temporary fixation of the spine. As to the method of fixation, elastic extension is one of the best. This should be carried out by anklets from the extremities of the lower limbs, and extension from the head as well as from the axilla. Leaving the very early cases, we come to those where an abscess has formed. The presence of an abscess may be difficult to make out, and can often only be guessed at. The treatment recommended for such cases is free incision, thorough emptying, and sewing up, using Trevis' method in cases of psoas abscess. In cases of affection of the cervical spine, the abscess should not be opened through the mouth, on account of the risk of infection by septic organisms, but laterally, where it can easily be reached, and the lymph glands which are also affected can be removed at the same time. Laminectomy may be necessary in order to reach the abscess, and in such cases the pedicles should be removed completely to provide for the thorough exposure of the cavity and free drainage. Complete removal may also obviate the necessity for a second operation which might otherwise be required. (From Mr. Horsley's paper at the British Medical Association meeting, 1898. Pediatrics, September 1, 1898.)

SPRAINS OF THE ANKLE.—The Gibney Bandage in.

The plan is simplicity itself. It consists in applying a tight bandage composed of adhesive plaster to the ankle and lower portion of the leg, immediately on the reception of the injury, paying no attention to the use of rest or elevation—at least not after the first twenty-four hours. The results obtained by this simple treatment seem out of proportion to the attention paid to the sprain ; but certainly the clinical history of these cases is remarkably good. As a rule the patient is able to walk with comparative comfort immediately after the application of the bandage ; he experiences no especial discomfort, and in a few days he is practically well. The most marked thing about the treatment is the surprise of the patient at his progress ; he is, of course, familiar with the progress of other cases, and it

seems impossible for him to get over his astonishment before he is lost sight of by his attendant. (From Dr. J. H. Adams's paper in the Medical Age, October 10, 1898.)

TETANUS, TRAUMATIC.—Intra-cerebral Injection of Antitoxin in.

(M. Bacaloglu and MM. Chauffard and Quénu, *Gaz. des Hop.*, Nos. 70 and 73, 1898.)—MM. Roux and Borel, from experiments on guinea pigs and rabbits, came to the conclusion that a few drops of antitoxin injected intra-cerebrally, were equivalent to large quantities introduced into the blood or under the skin. M. Bacaloglu treated a pronounced case of tetanus in a man by this method after subcutaneous injections had been given in vain. The case was a very bad one, and a fatal result ensued. MM. Chauffard and Quénu report a similar case where the patient recovered. (Quarterly Medical Journal, October, 1898.)

WOUNDS.—Pressure in the Treatment of.

Mr. A. Pearce Gould discussed the value of pressure in the treatment of wounds, remarking that the importance of securing asepsis had revolutionised surgical procedure, and had shown the small part played by other measures in securing and in influencing the perfect repair of wounds. He thought there was a tendency to insist on details which were not of real importance, as, for instance, the enforcement of one position for days for the purpose of securing rest, which he described as an exaggeration. In respect of pressure he pointed out that it was largely ineffectual for the purposes for which it was employed, that it was often mischievous and might safely be dispensed with. Pressure was usually employed to secure apposition of the edges of wounds, to prevent oozing, to prevent bagging of fluid, to restrain muscular action, and to prevent the yielding of cicatrices. For some time past he had abandoned the use of pressure for these purposes and the wounds had healed better, while the comfort of patients was greatly promoted. Pressure might easily prove harmful by provoking sloughing when there was a large flap, as after removal of the mamma. He had been struck by its inutility in certain cases, as where, for instance, fluid tended to collect beneath the flap after the edges had united. Pressure under these circumstances did not prevent the accumulation, whereas the insertion of a drainage tube at once overcame the difficulty. Pressure was equally inefficient when there was bagging of pus, when a counter-opening was required. Even when direct ill-effects were avoided the good effects were often independent of the employment of pressure, equally good results being obtainable by means of a simple collodion dressing. He held that pressure was unnecessary,

even after such an operation as excision of the mamma. Even after laparotomy for removal of large ovarian cysts or for hysterectomy, a simple collodion dressing was better than mountains of cotton wool and the firm bandage that was still largely used. (British Medical Journal, December 3, 1898.)

AFFECTIONS OF THE SKIN, &c.

COCAINE.

For rendering sores anæsthetic, Unna (*Monatsh. f. Prakt. Derm.*, vol. xxvi., No. 5, p. 239, 1898) advises the application directly or by means of wet cotton of a powder composed of cocaine hydrochlorate (0·5 to 1 per cent.) and magnesium carbonate (10 per cent.). Good results were obtained in senile pruritus without complication by using a 1 to 2 per cent. ether or alcohol-ether solution of Merck's pure alkaloid in spray or collodion. In pruritic eczema, zoster and some forms of lichen planus, a $\frac{1}{2}$ per cent. solution of the pure alkaloid in almond-oil acts better. (Treatment, October 27, 1898.)

ECZEMATOUS HANDS.—Washing of.

Dr. Unna (*Monatsh. f. Prakt. Dermat.*, June 1, 1898) says that it is quite possible to cure eczema of the hands without compelling the patients to give up their occupation, even though they may be engaged in such work as cooking, baking, bricklaying, or other occupations in which the hands are constantly filled with dust. It is not the washing of the hands which increases the eczema; on the contrary, the careful cleansing of the skin is favourable to the cure of that trouble if the skin is not thereafter exposed to the air or to some other irritant. Hence he makes it the rule that a thorough washing of the hands in such patients shall take place in the evening, and that the skin shall be rubbed with some oleaginous substance and protected from drying by an impervious covering of wash-linen or rubber. In the morning the hands are simply wiped clean but not washed. Before meals the hands are oiled and wiped, or if they are so dirty that washing is unavoidable, they should first be oiled, then washed with soap, and immediately wiped and thoroughly oiled again. In brief, the treatment is included in the two precepts: No washing without a subsequent oily bandage; and the substitution of a thorough evening cleaning of the hands for the usual morning washing. (Medical News, July 30, 1898.)

LUPUS ERYTHEMATOSUS.

Dr. Unna (Hamburg) remarked that until definite views were established as to the pathology of lupus erythematosus, no satisfactory line of treatment could be laid down. He had found no evidence of the truth of the tuberculous theory. Although he finds desiccating remedies of value in the form of powders (zinc oxide, calamine, terra silicea, &c.), pastes (zinc-sulphur) or washes (Boeck's liniment); they are inferior to compressing remedies (collodium or gelanthum with ichthyol, soft soap or salicylic acid). The most generally valuable remedies are antihyperæmic, and of these the best are plaster-mulls or pastes of pyroloxin (oxidised pyrogallol), or oxide of chrysarobin, and wet dressings with alkalies and alkaline or salve-soaps. Pyroloxin, although not irritating or toxic, has a local effect almost meriting the epithet "specific." With such measures the careful use of the microcautery may often be advantageously combined. In extremely exceptional cases only does he now use either necrotising (salicylic plastermull, peeling paste) or inflammatory remedies (iodine, nitrate of silver, carbolic or acetic acids, chrysarobin, resorcin, cauteries). These latter occasionally produce pleasing primary effects, but recurrence always ensues. (From Report of British Medical Association Meeting in British Journal of Dermatology, October, 1898, p. 373.)

PEMPHIGUS FOLIACEUS.

Dr. Hellier read before the Leeds and West Riding Medico-Chirurgical Society notes of a case of pemphigus foliaceus which attacked an apparently healthy female child on the ninth day after birth. The disease was virulent and rapidly fatal. On the tenth and eleventh days huge flaccid bullæ formed upon the trunk, face, and limbs, and when the child died early on the twelfth day the skin of about half the surface of the body was either covered by enormous serous blebs, or entirely denuded of its cuticle. The child looked as though it had been scalded with boiling water. The cause of the attack was not known. The mother was a healthy primipara, and the father a strong healthy man. No specific history in either parent. The child was born in a healthy middle-class house in a good neighbourhood, and was nursed with every care. There was no known source of naval infection. The mother made an excellent recovery from childbed. Dr. Hellier said the disease was rare, and very fatal. It was said to have occurred in epidemic form. Dr. Liddell said pemphigus neonatorum was considered to be due to septic causes in connection with the surroundings of childbirth. Pemphigus foliaceus was a rare disease, usually running a chronic course, while Dr. Hellier's case was one of

exceptional rapidity. Under the term "Dermatitis exfoliativa neonatorum" Ritter had described a class of cases in infants, some of which bore a resemblance to pityriasis rubra, while others, presenting flaccid bullæ like pemphigus foliaceus, were regarded by some authorities as examples of that disease. (British Medical Journal, November 19, 1898.)

REST IN DISEASES OF THE SKIN.

Under this title Dr. Allan Jamieson, read a very interesting and suggestive paper at the Edinburgh meeting of the British Medical Association. Throughout it are scattered many valuable hints as to treatment. We notice that Dr. Jamieson recommends the glycerine of starch as a vehicle for numerous remedies in pruriginous and inflammatory affections. He suggests that this preparation should have double the quantity of glycerine prescribed by the Pharmacopœia; its formula would thus read:—Starch, 20 gm.; glycerine, 260 c.cm.; distilled water, 30 c.cm. This preparation may be medicated with boric acid, camphor, naphthol, resorcin, and other remedies, as occasion demands. Dr. Jamieson also drew attention incidentally to the relief which is obtained in many instances by the use of properly prepared medicated soaps in cases of pruritus. In another class of cases, such as acne, Dr. Jamieson spoke of the value of the ointment containing salicylic acid, sulphur, and soap (Boeck), and the desquamating pastes with resorcin recommended by Unna. In erysipelas, Dr. Jamieson spoke highly of the use of ichthyol. He recommends its use as a 25 per cent. paste made with prepared chalk and vaseline, spread over the affected region, and covered with a layer of cotton wool. "An agreeable feeling of coolness is at once experienced, and further progress is arrested, and simultaneously the fever and other disturbances abate." (From Dr. Galloway's abstract in the Practitioner, 1898, p. 525.)

SYPHILIS.—Injection Treatment of.

(By Michel and Roche, *La Presse Médicale*, No. 49, 1898, p. 313) As the usual methods of treatment in the case of the prostitutes admitted to the hospital were found unsatisfactory, intra-muscular injections of grey oil were first tried, then calomel. The latter was first used in 3 centigramme dozes (Jullien, Feulard, &c.), then increased to 4 centigrammes (Wickham). Freshly-prepared material only should be used. During the last three years a total of 1,242 injections were given. One hundred and thirty-five women were treated in this way—twenty-one on the second or third day after the appearance of the hard sore, eight tertiary cases, one case of severe syphilis following a chancre of the upper lip, five of

syphilis of the liver, the remainder for usual secondary symptoms (roseola, papular syphilides, condylomata, &c.). Most of the women received 8 to 12 injections, five had 15, one had 17, two 20, and one 23 injections. In all the cases the injections were fortnightly, except in twelve cases in which they were weekly. With regard to the drawbacks to the use of the insoluble mercurial salts, the authors conclude as follows :— Pain was never very severe, at times fairly marked, often absent altogether. At its maximum, about ten hours after the injection. Abscess—Four, two of which were due to over-fatigue on the part of the patients. Stomatitis—One case. Gingivitis — Five cases. Constitutional symptoms — None. Induration at the seat of the injections—Forty-three, usually due to the way the injection was made. The authors consider the drawbacks have been exaggerated. In their opinion, the method is the best for hospital practice. They do not use soluble mercurial salts owing to the great number of injections required. With regard to private practice, they hold the same views, except that mercury by the mouth is sometimes a matter of necessity. (Dr. George Pernet's abstract in the British Journal of Dermatology, October, 1898.)

X-RAYS AND SKIN AFFECTIONS.

Oudin, Barthélemy, and Darier have in a series of articles, based on the particulars of fifty cases, directed attention to accidents in the use of the rays (*France med.*, Paris, 1898, Nos. 8-12). These include, speaking generally, œdema, cyanosis, hyperkeratosis, alopecia, &c. Some are traceable to inexperience in the use of, some to ignorance in presence of, a new power. Warned by the misfortunes of others, they have tried to avoid such by great caution, by placing the tubes at a distance of 15 to 20 cms. from the body, and by not employing an electric intensity of more than six to eight ampères. Yet in 400 cases there were five troublesome accidents. These were two small sloughs on the lobe of the ear, and erysipelas-like erythema on patches of lupus, an alopecia lasting two months, and in a child of 7, who had dined an hour before, a sudden and violent fit of indigestion, followed for two months by intermittent attacks of dry colic. The harmful effects are shown by—(1) Integumentary lesions—(*a*) Acute ; redness, pain, swelling, vesiculation, blebs, desquamation, sometimes sloughing with cicatrices. (*b*) Chronic ; dermatitis, thickening, loss of elasticity, of sensibility, scaling, &c. (*c*) Loss of hair, nails, &c. (2) Visceral symptoms. It is curious that of two individuals, placed under similar circumstances, there is no constancy of effect. Still, unpleasant consequences seldom fail if the exposure is too prolonged, too

frequent, or the approximation too near. There are also differences of individual vulnerability. We may compare the accidents with those produced by electricity of high tension. In order to protect against such untoward casualties, perforated plates of lead or other metallic leaves have been employed, but such are awkward, and cannot easily admit of being graduated. Unna (*Monatsh. f. Prakt. Dermat.*, Hamburg u. Leipzig, May 15, 1898) suggests as a suitable mode of screening the skin, the application of zinc-glycerine jelly, containing salts of metals having high atomic weights. This is pleasant and does not interfere with movement. Substances must be used which have no injurious action on the integument, and of these cinnabar and oxychloride of bismuth are the best. A zinc jelly, containing 10 per cent. of each, is red in colour and resembles pretty closely the natural hue of the skin. This, when painted fairly thickly on the hands of those engaged in using the X-rays, and covered with a film of absorbent cotton, acts as a very efficient protection, especially in the case of those who possess an idiosyncrasy to the rays. (From abstract in the Edinburgh Medical Journal, October, 1898.)

AFFECTIONS OF THE EYE, EAR, THROAT, &c.

ANTRUM, EMPYEMA OF.

The principle of treatment I would advocate is as follows:—In all cases of pus in the maxillary sinus in which a deceased tooth is not an etiological factor, the proper course to pursue is to cut away all overgrowth of tissue in the region of the ostium maxillare in order to restore normal drainage through the anatomical outlet of the cavity. It is not difficult to wash out and medicate the antrum by this way, and in a fair proportion of cases a cure may thus be obtained in a relatively short time with comparatively slight discomfort to the patient. Should improvement fail to follow in the course of a few weeks, we must conclude that the mucous lining of the sinus has undergone degeneration which necessitates curetting of its walls through an artificial opening. (From Dr. C. H. Knight's paper in the Journal of Laryngology, July, 1898.)

MIDDLE-EAR DISEASE AND LIFE ASSURANCE.

Dr. M'Bride said the subject was limited to consideration of chronic suppuration of the middle ear. Schwartze's clinic gave only 13 deaths out of 2,032 cases, or 6·4 per 1,000. These statistics can be relied upon as following through the greater part of the cases. Potletzer had recommended the refusal of all cases of suppurative middle-ear disease. This would appear to

be too severe. Several points were of importance in this subject. The occurrence of pain should give rise to great suspicion. The presence of granulations or polypi should entail rejection, so also should necrosis, true cholesteatoma, or occlusion of the meatus from other causes when suppuration is present and when this condition is complicated with facial paralysis. In absence of this condition we must consider: (1) the perforation is of greater importance if it be small and high up; (2) the discharge—if this is copious and fœtid the case must be declined; and (3) the social position is of great importance. A favourable sign was the following:—A slight not fœtid discharge, care being taken to find out by probing if this condition is only apparent and that deeper-seated mischief did not exist. (From discussion at the British Medical Association meeting, The Lancet, August 6, 1898.)

MYDRIN.

Mr. S. Stephenson found that the pupil became dilated in a period which varied, according to the individual, from 15 to 68 minutes, the average of the twenty observations being 29·35 minutes. The mydriasis was found to ensue more speedily if patients kept their eyelids closed after the application had been made. Owing to the fact that the iris did not completely lose its action to light, there was some little difficulty in measuring the size of the dilated pupil, the transverse diameter of which ranged from 5 to 7·5 mm., and averaged 6 mm. For a similar reason it was not altogether easy to say with precision when mydriasis had passed away. But in no instance did the maximum time (after full dilatation) exceed four hours, while the minimum stood at 75 minutes. The average worked out at 184·84 minutes—that is to say, a trifle more than three hours. In no case did sight, either for distant or near objects, show any alteration when the eye was fully under the influence of mydrin, a remark which applies also to the position of the punctum proximum. Lastly; it is practically important to note that the agent set up neither discomfort nor irritation. As the result of my observations, I have reached the conclusion that mydrin is capable of doing all that writers have claimed for it—namely, that it causes a moderate dilatation of the pupil without involving the function of accommodation. (The Lancet, July 2, 1898.)

OPERATIONS NOW USUALLY SUBSTITUTED FOR ENUCLEATION OF THE EYEBALL.

(By John Hern, M.D., F.R.C.S. Edin.) It should be clearly understood that in some cases, especially those in which sympathetic irritation has supervened in the uninjured eye,

enucleation is the only justifiable proceeding. (1) *Evisceration.*—(*a*) The operation I prefer is to transfix the globe with a Graefe knife, entered about two lines external to the corneal margin, about the centre of the globe, passed through the vitreous chamber, and a counter puncture made exactly opposite to the point of entrance; the knife is now brought out by cutting through the sclera, just beyond the corneal margin; another incision is now made with the scissors on the opposite half of the globe corresponding exactly to the incision made with the Graefe knife; thus the whole cornea is removed. Whatever remains of the iris and ciliary body is now removed by the curette, being careful to retain as much of the vitreous as possible; the gaping wound in the sclera is now carefully stitched up. This leaves a good freely moveable stump, on which in about six weeks an artificial eye can be fitted. The cosmetic effect is extremely good. (2) *Mules's operation.*—In suitable cases, if done without delay (on the day of accident if possible), if done with strict antiseptic precautions, and if a glass ball be selected which fits loosely into the emptied sclera, results are obtained from this operation which leave nothing to be desired. (3) *Removal of anterior staphyloma.*—This is chiefly valuable in children in whom enucleation necessitates the wearing of an artificial eye, which is always getting broken, from the fact that the orbit grows and the eye becomes too small. I always perform this operation exactly as advised by our President (Dr. Argyll Robertson) in his lectures delivered at the College of Surgeons in 1881, and have found its results most satisfactory; frequently one-half or even two-thirds of the cornea has been left, and the cut corneal margin sutured to the sclera, and has always resulted in good union. (4) Optic nerve section I have never performed. (British Medical Journal, August 20, 1898.)

OPHTHALMIA, INFANTILE.—The Cornea in.

If the cornea be hazy or ulcerated when the case comes under notice, the ordinary treatment is to instil three times a day one or more drops of a solution of atropine sulphate, two grains to the fluid ounce. Many surgeons now prefer eserine (physostigmine), which they employ in the form of a solution of the sulphate, of a strength ranging from one to five grains to the ounce of distilled water. An equal part of hydrochlorate of cocaine may be added with advantage to the solution, of which one drop or more is to be used three or four times a day. In my own work, I prefer eserine when the cornea is merely cloudy, and atropine when it is actually ulcerated. Since the corneal mischief is merely secondary to the conjunctival inflammation, treatment by silver must be continued, but care

should be taken to limit the action of that substance, as far as may be, to the mucous membrane. The eye need seldom be bandaged. If the ulcer be deep, or if its edges be yellow, or if there be pus in the anterior chamber, then more active measures must be taken if the eye is to be saved. By far the best plan is to anæsthetise the baby, insert a speculum between the lids, remove all traces of discharge, and apply the galvano-cautery freely to the ulcer and surrounding parts, first clearly defined by dropping into the eye a solution of fluorescin. By the prompt use of the cautery many an eye is now saved that would once have been doomed to blindness. After the operation, iodoform should be sprinkled over the parts, and a bandage applied. Another plan, which, if carried out carefully, is almost as likely to succeed, is to paint the ulcerated spot with the acidum carbolicum liquefactum of the British Pharmacopœia. The immediate effect of this latter procedure is to make the parts touched look as if they had been coated with white oil paint, but this soon passes away. Meanwhile, treatment by silver, &c., should be kept up, and the eye be bandaged. (From Dr. Stephenson's paper in the Medical Press and Circular, June 1, 1898).

PARACENTESIS OF THE DRUM MEMBRANE.

Paracentesis often prevents a serous inflammation from becoming a purulent one, prevents adhesions and permanent damage to the ear. Long-continued suppuration is always productive of harm and is difficult to cure. In an acute case, if in doubt, perforate the drum. The wound heals only too quickly, while the perforation made by nature is a round one eroded on the tympanic surface and slow of healing ; the cicatrix is thinner than the rest of the drum and often bound down by adhesions to the inner wall of the tympanum, resulting in a partial loss of its vibratory function. While I believe in conservative treatment, I think were paracentesis done oftener in acute cases that there would be fewer cases of long-continued suppurative ear disease. The operation is not difficult, provided one is accustomed to the use of the forehead mirror and is familiar with the topography of the drum. A paracentesis needle, or very small knife, will answer. (From Dr. G. L. Richard's paper in the Boston Medical and Surgical Journal, July 28, 1898).

PILOCARPINE IN INTERNAL EAR DEAFNESS.

Jollye, in the *Arch. of Otol.*, February, 1898 (*Journal Lar.*, June, 1898), reports the case of a girl who at the end of an attack of mumps was seized with vertigo and deafness, both of which symptoms were first noticed on rising from bed one morning. The tuning-fork could not be heard on the right side either

by air or bone conduction. For a short time a counter-irritant treatment, with bromides and antipyrin, coupled with politzerization, was adopted. For a few weeks the giddiness improved slightly, but absolute deafness persisted in the right ear. Pilocarpine injections were now commenced, the dose being run up from $\frac{1}{24}$ to $\frac{1}{6}$ of a grain in twelve days. The watch was for the first time heard on the right side, and the vertigo had so far diminished that the patient was able to stand alone. For the next fortnight a dose containing $\frac{1}{3}$ grain of sulphate of quinine and $\frac{1}{4}$ grain of nitrate of pilocarpine was taken three times a day. The hearing was by this time distinctly improved, and after six weeks without pilocarpine the watch could be heard at two or three inches, and the patient was able to walk with very little difficulty. Eighteen months later the hearing was found to be perfect on both sides. (Treatment, October 27, 1898).

RHINITIS, FIBRINOUS, AND DIPHTHERIA.

To summarise the present position in regard to fibrinous rhinitis:—(1) While admitting that other bacteria besides the Loeffler bacillus may give rise to membranous exudation in the nasal passages, the vast majority of cases of fibrinous rhinitis are due to the Loeffler bacillus. (2) It is impossible on clinical grounds alone to distinguish fibrinous rhinitis from mild nasal diphtheria. (3) All cases of fibrinous rhinitis should be regarded as diphtheria until the contrary has been proved by reliable bacteriological investigation. (From Dr. Hunt's paper in the British Medical Journal, October 12, 1898.)

TOLUIDIN-BLUE AS A COLLYRIUM.

From Veasey's observations made in studying the action of toluidin-blue during the past six months, the following conclusions have been formed:—(1) Solutions of toluidin-blue can be employed with benefit in all inflammatory conditions of the eye in which a collyrium is indicated. (2) Solutions of the strength 1 in 1,000 have thus far seemed to be as effective as any that were stronger. (3) Whether or not there is considerable discharge it is just as effective to cleanse the eye with some colourless collyrium first and to follow this with the use of the solution of toluidin-blue. (4) In the presence of purulent disease, the formation of pus seems to be materially and quickly lessened. (5) Abrasions and ulcers of the cornea are stained a deep blue, no other portion being affected. The solution, therefore, enables observation from time to time of the size of an ulcer, while at the same time the reparative process is being promoted by its use. (6) The stain upon the skin is readily removed by washing with water. (From abstract in Quarterly Medical Journal, October, 1898.)

TUBERCULOSIS OF THE EYE.

Tuberculosis of the conjunctiva is often unrecognised owing to its close resemblance, in the early stages, to trachoma. I have seen a few cases that were undoubtedly tubercular, but I think the diagnosis is easy. The proof of its presence lies in a bacteriologic and histologic examination of the suspected tissues. The later ravages of the disease are unmistakeable, or at least give rise to the suspicion that the process in question is not purely trachomatous. The treatment is practically that of tuberculosis of the skin, thorough destruction of the diseased parts. I believe that a general tuberculosis may be set up as a result of systemic infection through the lymph channels communicating with the pre-auricular glands. Infection of the cornea is usually secondary to conjunctival tuberculosis, and when it occurs may for a time resemble an ordinary pannus or an interstitial keratitis. Tubercle of the intra-ocular structure is still rarer. The chief sites are the iris and choroid, and when they occur they are usually late manifestations of a general tuberculosis. The nodules of a tubercular iris usually appear upon an otherwise healthy membrane, that is apart from acute inflammation, so that one's suspicion of the true nature of the small growths should at once be aroused by the fact. Some of these cases recur with more or less damaged vision, if the patient lives long enough, but in the majority of instances the eye is destroyed. I have seen very few cases of true miliary tubercle of the choroid, the commonest form of the disease. (From abstract of Dr. C. A. Wood's paper in the Journal of the American Medical Association, June 11, 1898.)

OBSTETRICS AND GYNÆCOLOGY.

BROW PRESENTATIONS.—The Treatment of.

Solowieff (*Centralbl. f. Gynäk.*, Leipzig, 1898, No. 30) refers to the usual terminations of an original brow case, and to the dangers for mother and child of persistent cases. He quotes the statistics of the Moskaw Maternity for the past ten years, thus :—Face cases, 21, of which seventeen terminated without assistance ; two with forceps ; two with craniotomy. All mothers recovered. Child mortality, 14 per cent., which is attributed to the associated pelvic contraction. Brow cases, 18, of which ten terminated with turning and extension ; one with turning and forceps ; one spontaneously ; one with occipital presentation ; five with face presentation. With reference to the last termination, Solowieff describes a method of converting an original brow into a face case, which he considers new and

original. Five cases are given in detail, illustrating this plan, which consists in introducing the forefinger into the child's mouth, and thus drawing the chin towards the brow, and retaining the finger here till a pain fixes the head in the new position. He recommends this method on account of its (1) simplicity, (2) avoidance of injury, (3) diminished danger of infection as compared with the operation of turning, and (4) favouring rapid termination of labour. (Edinburgh Medical Journal, October, 1898.)

CURETTAGE IN SUBINVOLUTION.

In the *Archiv f. Gynäkologie*, 1898, Bd. 55, Heft ii., Knapp reports his experience in cases of subinvolution in which he has curetted the uterus during the puerperal state. His patients were twelve in number. None of them had fever after child-birth, and there was no adequate cause for subinvolution which could be detected. All ordinary methods of securing involution had been faithfully tried. As indications for the operation, the following were considered sufficient: First, the retention of placenta or membranes within the uterus; second, the failure of other methods to secure involution; third, when the patient could not wait for prolonged involution to occur. Many working women could not afford to remain in the hospital a sufficient length of time without operation. His cases all improved rapidly and were discharged cured six days after the curetting. Ergotin was given after the operation with good results. (From abstract in American Journal of Medical Science, 1898, p. 362.)

DECIDUOMA MALIGNUM.

Laennberg (*Nord. Med. Ark.*, Stockholm) has investigated all the recorded cases of deciduoma malignum, which are fifty-three in number. In twenty-four of these the condition appeared immediately after molar pregnancy. Three new cases are reported. One, who was 42 years of age, was delivered of a hydatid mole, followed by bleeding; four weeks later the uterus was removed, there being secondary growths in the vagina, which were also removed subsequently. The microscope showed the growth to contain two cell elements:—(1) Synctium, formed by flattened giant cells, containing numerous vacuoles; (2) large polygonal cells with well-defined contour. The tumour extended in the form of papillæ into the healthy tissues, but did not affect the structure of the uterine walls. The author believes that the serotinal epithelial cells had undergone malignant degeneration, and that both they and the polygonal cells are of maternal origin. (Edinburgh Medical Journal, August, 1898.)

DISPLACEMENTS.—Best Operation for Uterine.

(By A. Lapthorn Smith.) The conclusions to which the author had come in his paper were based—(1) Upon his own personal experience of 111 ventrofixations and 89 Alexander operations; (2) upon the experience of 40 first-class operators, all fellows of the American Gynæcological Society, who had had among them about 2,500 ventrofixations or suspensions of the uterus; and (3) upon his recent visit to the leading gynæcologists of Europe, whom he had seen performing vaginal fixation. His own experience with Alexander's operation was all that could be desired; no difficulty in finding the ligaments, no hernia, only one relapse, and no trouble in subsequent labours. With ventrofixation the cases had been much more serious because he had only done it when there were diseased tubes causing fixation of the uterus; one patient had died, one had relapsed, one had a hernia, two had miscarried, and three had had normal labours; in seven cases a buried stitch had required removal subsequently. Out of the cases reported by other operators above mentioned there had been 146 pregnancies, in 36 of which there had been pain, miscarriages, or difficult labour requiring obstetrical operation, and two of these women had died. Most of these operators had abandoned fixation, and now performed suspension by stitching round ligaments to abdominal wall. As a result, however, of what he had recently seen on the Continent, he would now abandon both Alexander's operation and ventrofixation and ventrosuspension, and treat all these cases in future by vaginal shortening of the round muscles, which had the following advantages:—(1) It is very easy; (2) it can be done very quickly; (3) it should have no mortality; (4) it is free from subsequent pain; (5) it will do as well for cases of retroversion with fixation as for those in which the uterus is freely moveable; (6) it does not interfere at all with subsequent labour or pregnancy; and (7) it does not leave any painful wound or unsightly scar, women being more willing to have an operation in the vagina than in the abdomen. (Medical Chronicle, August, 1898.)

ELECTRICITY IN GYNÆCOLOGY.

In the Apostoli treatment for uterine fibroids, we have a combination of galvanocauterization of the mucous membrane of the uterus and of interpolar electrolysis. It is not an infallible remedy; I have seen cases in which it had no effect; but the worst cases are the most grateful. In the majority of cases, pain ceases very soon, menstruation becomes normal, the patient regains general health, and the tumour is reduced in size and becomes stationary. In one patient whose uterus reached an inch above the umbilicus there was no diminution,

but when I saw her six years later, the uterus had not grown, and she had been well in the meantime. In some cases I have seen tumours pushed out of the wall so as to form prominences in the peritoneal cavity. Only in one case have I seen the myoma disappear altogether. One such case is enough for me nearly always to recommend a trial of electricity before resorting to operative procedures as did Thomas Heith, the most successful operator for fibroids in his time. In operations for carcinoma the galvanocautery is of great value, whether used with the dome-shaped cautery to sear a cavity left by the curette, or with a wire to extirpate the cervix, or with a knife with which we either can cut off a portion of the uterus or remove the whole uterus with its appendages. The last-named method is recognised as the best of all methods of vaginal hysterectomy for carcinoma, because it avoids wound infection and perhaps even destroys the germs of the disease at some distance beyond the place where it is applied. In closing I will only recall the value of the electric lamp in abdominal or vaginal operations. (From Dr. H. J. Garrique's paper in the Medical News, June 11, 1898).

ENDOMETRITIS, GONORRHŒAL.

In a typical case of chronic endometritis, the mucous membrane is thickened and congested and the surface covered with a muco-purulent secretion; it bleeds easily. The muscular walls are thickened and the uterus, as a whole, is heavier than normal. The ultimate result of the process is a considerable atrophy; the ciliated epithelium is replaced by a smooth pavement epithelium which resembles to some extent that of the vagina and has few glands of the normal uterine type; the walls of the uterus become thinner, some of the muscular tissue being replaced by connective tissue. This change may be said to be nature's method of making the uterus an unfavourable field for the growth of the gonococcus. In the early stage of inflammation it is not difficult to demonstrate the gonococci; but in the chronic stage the organisms are rarely found in the secretions; they must then be sought in the mucous membrane. Sänger applies the term residual gonorrhœa to this stage of the disease when the gonococci cannot be found. The inflammatory process goes on long after the exciting cause has disappeared. Wiener says there are few cases on record in which gonococci have been found in the secretion three months after infection. The treatment of chronic endometritis by the curette and caustic applications is now very generally regarded as the most effective. It removes the diseased mucous membrane and this is replaced by a new membrane which is at least more nearly normal in character. Many observations have been made to ascertain the

length of time necessary for this reproduction, and it appears that an entire endometrium may be reproduced in about twenty-five days. The curetting should be done thoroughly and proceed systematically from any one point over the whole surface; the object sought is the removal of the entire endometrium down to the muscular tissue. If a curette of medium size is used upon the body of the uterus, a small instrument must be used upon the cornua. Many operators advise the use of the small curette exclusively. The denuded surface should then be painted lightly with a strong caustic, like carbolic acid. This may seem heroic treatment, but it must be nothing less in order to be effective. Packing the uterus is generally conceded to be unnecessary. (Boston Medical and Surgical Journal, September 1, 1898.)

ENUCLEATION OF FIBROIDS.

In the opinion of Dr. Herbert Spencer, enucleation per vaginam, for some fibro-myomata, was an extremely valuable operation, and yielded very good results. The preliminary dilatation was an important matter. It was usually important to have the os dilated sufficiently to admit two fingers; this he had generally done by Hegar's dilators and the fingers—there were certain special risks in the prolonged use of tents in these cases,—but he thought that perhaps plugging with iodoform gauze would be a more satisfactory method of dilating the canal. He did not limit the size of the tumours suitable for enucleation per vaginam to that of a fœtal head, and the limitation proposed by Dr. Lewers was also, in his opinion, too strict. He had successfully removed, at one sitting, a sessile tumour weighing 2 lbs. 2 oz., through a cervix undilated before the operation, and had successfully removed much larger tumours at several sittings—a method, however, which he did not recommend. During the operation he had, in one other case, accidentally opened the peritoneum; in that case, after completely removing the tumour, he stitched up the hole, and the patient recovered well. It was obvious that even if vaginal hysterectomy had to be performed, the patient would be better off than if she had an abdominal scar, not to mention the smaller risk of the vaginal operation. (Journal of the Obstetrical Society, vol. xl., 1898.)

FORCEPS AT THE PELVIC OUTLET.

A forceps operation is usually undertaken for the greater safety of the mother and child. In this group we choose to deal with those cases in which the child alone is considered:—(*a*) When the child is debilitated and small and is not likely to withstand the vicissitudes of labour, though of average duration; (*b*)

when the mother gives the history of having borne children that have died during labour, pending spontaneous delivery or soon after; (*c*) when the head has been upon the perinæum, under pressure long enough to jeopardise, or better, before it jeopardises the life of the child; (*d*) in cases of hemorrhage *in partu*. An escape of blood during an intermission of pain and recession of the head points to a premature separation of the placenta, or laceration in some portion of the birth canal. When this occurs, little time should be lost in determining the site of the hemorrhage. If not found in a laceration, we must act upon the supposition that the hemorrhage is placental and apply the forceps. The integrity of the perinæum should be of secondary consideration, for a wound well repaired will heal more easily than life can be restored to the child. (From Dr. Root's paper in the New York Medical Journal, October 29, 1898.)

FORCEPS.—Premature Use of.

I may perhaps best put it thus:—(*a*) The forceps are often used at the wrong times. (*b*) They are sometimes not used at the right times. (*c*) They are often badly used at both times. The danger of the forceps operation, apart from the risk of septic infection (which, of course, is common to most operations), may be summarised thus:—(1) The mother's parts may be bruised, lacerated, or otherwise injured by mechanical violence. (2) The too sudden emptying of the uterus may be followed by imperfect retraction, and, consequently, dangerous hemorrhage. (3) The fœtal head may be unduly compressed, lacerated, or otherwise damaged. Now, in spite of all that has been done and is being done to diminish the risk and suffering of disease by anæsthesia, antiseptics, and other means, there seems a lingering doubt in the minds of some as to whether the abolition of the pain and suffering of labour would be an unmixed blessing. For myself I have no such scruple, and were I able to do so with safety I should gladly abolish every pain after the first, and reduce the duration of labour to a bare minimum. But unfortunately this is not practicable. Physiological labour consists of a series of phenomena which require time for their development; and a grave abuse of the forceps consists in their employment in such a way as to interfere with the proper sequence of the normal physiological events.—(From Dr. Milne Murray's paper read before the British Medical Association, 1898. British Medical Journal, August 20, 1898).

FUNIS, HOW TO REPLACE A PROLAPSED.

Wash the hands with warm water and carbolic soap, wash off soap suds by pouring warm water over them, then dip them in corrosive sublimate 1 in 1,000, or lysol 1 per cent. for two

minutes. Now wash and disinfect the external genitals with soap and water, followed by corrosive sublimate solution, disinfect prolapsed funis, wash and disinfect again hands and arms up to elbow, douch out vagina with a 1 per cent. solution of lysol or creolin, empty bladder if necessary. This being done, place the patient in the genu-pectoral position and introduce the hand into the vagina. Grasp the whole prolapsed funis in the palm of the hand, and pass the hand into the uterus and try to get the funis above the shoulders of the child. When this is accomplished draw the hand out of the uterus in another direction to that which you introduced it so as to try and prevent the funis from following it. The patient is to be kept in the genu-pectoral position for about five minutes, and then made lie on her back. Be careful when changing the position of the patient to try and keep the head pressed down over the brim by the hand from without. Listen for the fœtal heart sounds, and examine vaginally to find if the funis has remained up, if successful, allow the patient to deliver herself, except there are indications for a rapid delivery. If unsuccessful try again to replace it. It is recommended in cases where you have failed to replace it, or where it prolapses several times after replacement, to deliver quickly with forceps, or to perform internal version and extract quickly. (From Dr. R. A. Flynn's paper in the Medical Press and Circular, July 6, 1898).

GESTATION, ECTOPIC.

Dr. Bouilly, of Paris (*La Gynécologie*, April, 1898), maintains that surgical interference, is, as a general rule, a necessity, although some cases seem to recover spontaneously with perhaps an attack of some local peritonitis, or may end, after a sudden attack of pain, syncope, and sickness, in a uterine discharge lasting eight or ten days, that may at first be taken for the menstrual discharge. Such cases are, however, rare, and the general surgical rule may be laid down that extra-uterine pregnancy in course of evolution or arrested in its evolution imperiously demands operative interference. Patients are rarely seen before the pregnancy is advanced fully to three months. Only in four cases has Bouilly been called to see the case before rupture had actually taken place, and only twice has he seen cases so near to the moment of rupture as to make the idea of an urgent laparotomy, in neither of which the operation was performed, and in both of which he considers it should have been. The one woman succumbed to internal hemorrhage, the other had a second hemorrhage which nearly cost her life and made operation more dangerous. The object, indeed, of the operation is often to make further hemorrhage impossible, and time is often gained by subcutaneous injections of serum. If

possible, it has been proved better to wait twenty-four hours or so till the peritoneal shock and the acuteness of the anæmia are over. (From abstract in British Gynæcological Journal, August, 1898.)

Gestation, Ectopic.

Rupture of the tube may take place at any time from the first month onward, but is most common from the second to the fourth month. If the pregnancy is in the middle or outer part of the tube, if it opens up to some extent the layers of the mesosalpinx it may develop for some weeks before any rupture by extension occurs. When rupture takes place it is usually fatal without operation, but not so directly and immediately fatal as in cases of early rupture. The hemorrhage may be very variable in amount. If the placental site be involved it will be abundant, if the placental site be not involved it may be moderate, infinitesimal, or even wanting. Either diffuse hemorrhage or hæmatocele may be the result of later rupture of the tube. The hæmatocele of later rupture may be contrasted with that of tubal mole. It is quicker in formation, it is exceedingly unstable, it is accompanied by acuter symptoms, and it is consequently more dangerous. In a record of two cases one may be regarded as somewhat typical of the transitional state when a tubal pregnancy becomes abdominal. (From J. W. Taylor's paper in the Medical Press and Circular, June 15, 1898.)

Gestation, Repeated Ectopic, and Operation.

In the *Zeitschrift f. Geburtshülfe und Gynäkologie*, 1898, Band xxxviii., Heft 2, Falk reports the case of a woman, aged 29 years, who seven years before had a normal labour followed by a normal recovery. After menstruation had ceased for two months, she had bleeding for six days, but passed no membrane. She complained of pain in the sacral region and weakness. On examination an elastic tumour was found behind the uterus, and a few days afterwards the patient had a sudden attack of syncope. On abdominal section, pregnancy was found in the right tube, which was removed. The patient made a good recovery. Three years later she returned to the clinic in a very anæmic condition. There were dulness over the abdomen and a tumour behind the uterus, which was elastic. The history was given that the patient had ceased menstruation for several months, and that while milking she was suddenly taken with collapse. She took strong purgatives, which further reduced her strength. On opening the abdomen, the left tube was found pregnant and ruptured. Considerable blood had escaped behind the uterus. The tube and ovum were removed, the

pelvis emptied and drained, and the patient made a good recovery. (American Journal of Medical Science, 1898, p. 244.)

GONORRHŒA IN PUERPERAL FEVER.

The following are Dr. A. H. Burr's conclusions :—(1) Gonorrhœa is a widely disseminated disease, especially persistent and dangerous in females. (2) Gonorrhœa is directly or indirectly a factor in puerperal sepsis, and accountable for a larger percentage of complications and fatalities than commonly supposed. (3) Prophylactic measures, general and specific, are most important in averting the septic dangers of childbed. (Journal of the American Medical Association, September 3, 1898.)

HEART DISEASE AND PREGNANCY.

The experience of some having been very unfavourable has led them to consider premature labour inadvisable, while that of others, small as it is, having been more favourable, causes them to be less pessimistic. Such interference seems for many reasons to be objectionable unless the patient be materially distressed, and this she may not be at an early stage ; while the induction of abortion or premature labour at a later stage, when actual distress is present, adds to the dangers of the situation. From Dr. Feis's material (*Volkmann's Sammlung*, June, 1898) it would appear that early action is preferable in multiparæ who have shown increasing and progressive distress in succeeding pregnancies, and inasmuch as natural abortion and premature labour with dead child are not uncommon under these circumstances, the question of the life of the offspring has not the same weight as it has under many other circumstances. The general management of heart disease in pregnancy is that of such disease not thus complicated, and the use or non-use of the great cardiac tonics must be guided by the circulatory state, apart from the reproductive complication. Dr. Feis argues from the toleration of some such parturient women to large losses of blood that venesection may be desirable in some cases in which retrograde phenomena have reached a point of considerable distress. This being true of uncomplicated heart failure, is doubtless true here also. The danger of the chronically diseased heart failing *in arduis laboribus* appears to be very real, and Feis mentions as prime considerations the relief of the patient by the guarded use of anæsthetics and the maintenance of abdominal pressure by external weight, post partum, to avoid the evil effects of the comparative vacuum caused by the extraction or extrusion of the child. (From Dr. Morrison's summary in Treatment, August 11, 1898.)

HYDRASTIS CANADENSIS.

M. Marini (in the *Indépendence Medical*, April, 1898) lays down the following principal indications of the drug in question :— (1) Hydrastis canadensis administered at any stage during pregnancy, in amounts of from 100 to 200 drops a day for several consecutive days, has no dangerous action on the mother or on the fœtus ; it is the same when it is given during labour. (2) Administered either during pregnancy or during labour and delivery, as well as afterward, it exercises an invariable hæmostatic, curative, and prophylactic action on the uterus, without exercising any ecbolic action on the uterine muscle or moderating the contractions. (3) It is a therapeutic substance which is very valuable in obstetric practice, and is certainly superior to ergot of rye ; it does not present the inconveniences of the latter, and may be administered freely either as a curative or as a prophylactic in the metrorrhagias in all stages of pregnancy, labour, or delivery, and during the puerperium ; it is also a much safer remedy in the hands of midwives than ergot of rye. (From abstract in the New York Medical Journal, May 21, 1898.)

HYSTERECTOMY FOR SARCOMA OF UTERUS.

Dr. E. O. Croft (Leeds) related a case of hysterectomy for sarcoma uteri following hydatidiform mole, and showed the uterus removed and microscopic sections of the growth. The patient, a 4-para, aged 32, had been ailing since the birth of her last child, two years previously. After suckling the child for eighteen months the menses returned once or twice, and there was then severe flooding. A large hydatidiform mole was removed. About six weeks afterwards, intermittent bleedings and offensive discharge with septicæmia having occurred, the uterus was explored and the presence of masses of malignant growth discovered. The septicæmia and general symptoms having been relieved, vaginal hysterectomy was performed. Meanwhile the growth had been examined and reported upon by Mr. Targett, of the Clinical Research Association. The tissue consisted of uterine muscle substance infiltrated with sarcoma. The cells were spindle-shaped, many of them very large, like giant cells, but the characters did not resemble those of deciduoma malignum. The interest of the case turns on the clinical resemblance to this latter disease, and the fact of the malignant growth following a few weeks after the hydatidiform mole. The patient recovered, and is so far well, the operation having been performed three months ago. (British Medical Journal, November 5, 1898.)

IRRIGATION OF THE UTERUS IN ACUTE PUERPERAL SEPTIC METRITIS.

Horace Manseau (*Montreal Med. Journ.*, July, 1898) reports seven cases of acute puerperal septic metritis which were treated by continued irrigation of the uterus, and holds that this method of treatment, preferably preceded by curettage, if persisted in, may prevent recourse to the severe operation of hysterectomy. All the seven cases recovered, five of them again became pregnant, while two were lost sight of. His method is best shown by briefly describing one of his cases—3-para, aged 28. Normal labour at term. Placenta intact, also perineum. On fourth day had a rigor; temperature 103°·5, pulse 126. Vaginal douching proved ineffectual, also intra-uterine douches at intervals of three hours, the temperature on fifth day being 104°·5, pulse 135. On sixth day, continued irrigation with sterilised water was begun, and continued for twelve hours at the rate of about seven or eight gallons per hour. On seventh day, temperature 100°, pulse 115, and general condition improved. Irrigation was stopped five hours later, the temperature rising higher than ever. On eighth day irrigation was resumed, and maintained for twenty-four hours, temperature falling to 99°·5, pulse 110. During the writer's absence the midwife stopped the irrigation, and on the tenth day the temperature was 106°·5, pulse 180. When next seen patient had had several rigors, was delirious with tympanites, and the vagina bathed with pus. Irrigation was resumed, seven to twelve gallons of water per hour being passed into the uterus for forty hours, with four intermissions of an hour each, the temperature falling to 100°. Even during the intervals the temperature rose, and on the twelfth day after a few hours' rest there was a slight rigor, the temperature rising to 101°. Irrigation was again commenced, and kept up for three days, with intermissions of not over three hours, when convalescence was established. Over 2,200 gallons of water were passed into the uterine cavity in ten days. The recovery in this case is the more remarkable, as pneumonia developed on the tenth day. The writer holds that the result of this treatment merits its greater use, as the pelvic organs are preserved, and future pregnancy rendered possible. (Edinburgh Medical Journal, October, 1898.)

LABOUR, MISSED.

Dr. Mary Scharlieb, of London, reported a case of missed labour verified by operation and also post-mortem. The woman expected her confinement in July, 1895, but no labour ensued; in September following there were pains and vaginal hemorrhage. On admission to the hospital in that month the

patient was very ill, had fever, sordes on the lips, &c.; the abdomen was enlarged, but no fœtal heart sounds or movements were perceptible. Extra-uterine pregnancy was diagnosed. The operation was performed on September 28. When the woman was under anæsthesia the fœtal parts could be felt through the abdominal walls. The uterus was opened in the middle line and fœtid fluid escaped. A macerated fœtus, weighing twelve pounds, was removed. The uterus, which was friable, was amputated low down. The patient died twenty-eight days after the operation. Careful examination of the uterus and appendages proved conclusively that gestation was intra-uterine. (Medical Record, August 13, 1898.)

OVARITIS, CHRONIC.

I know of no pelvic condition more troublesome to treat than that known as chronic ovaritis. In the past, in too many cases, both the appendages have been removed, and in a large proportion of these I doubt if the patient has been much benefited by the operation. Menstruation usually ceases but the patient's sufferings continue. As an alternative the conservative operation of ignipuncture is well worth a trial. It may be done by vaginal section by either anterior or posterior colpotomy. The peritoneum having been opened any adhesions binding down the ovary are separated with the finger. The ovaries, one after the other, are then drawn into the vagina and punctured with the fine point of Pacquelin's cautery heated red-hot. Wherever there is an indication of a cyst in the cortex or an unusually thick portion of the capsule of the ovary the red-hot point is inserted. In this way from six to a dozen punctures, each about $\frac{1}{12}$ in. in diameter, are made in each ovary. The appendages having been replaced in the peritoneal cavity, the vaginal wound is closed with catgut and the patient is put back to bed. I have now performed this operation of ignipuncture for chronic or cystic ovaritis fourteen times. All the patients made an easy recovery from the operation. In five cases the operation failed to cure the patient, and in three of these I had subsequently to perform the operation of removing the appendages. One case has been operated on too recently for me to judge as to whether or not it will succeed. Of the other eight I have been able to trace all but one patient, leaving seven cases in which a cure has certainly resulted. One of these seven was a woman who had been married for five years but had never been pregnant. She became pregnant three months after the operation and was confined at the full term of a living child. (From Dr. C. Martin's paper on the Conservative Surgery of the Ovary, The Lancet, August 27, 1898.)

PAINFUL INTRAPERITONEAL ADHESIONS.

Vové-Josser and Goinard (*Journ. de Méd. et de Chir.*, April 25, 1898) describe, under this head, slight adhesions resulting from localised peritonitis following lesions of the alimentary canal or accompanying affections of the female pelvic organs. They may give rise to no symptoms whatever, but usually some neighbouring organ is more or less affected. Pain is most often present, persistent, well localised, and increased on deep pressure, but it is not colicky in character. At other times the pain may be dull, with occasional paroxysms, suggesting hepatic or renal colic. The paroxysms may coincide with the periods of physiological activity of the abdominal viscera. Constipation is more or less marked if the intestines are adherent, due, not so much to occlusion of the gut as to exaggerated peristalsis. Certain obscure vesical troubles are doubtless due to adhesions of the bladder. The diagnosis is exceedingly difficult, often impossible without resort to an explorative incision, but the presence of adhesions may be suspected in the presence of persistent localised pains following an attack of peritonitis or a cœliotomy. It is important to exclude hysteria, especially if operative interference is contemplated. (American Journal of Medical Science, November, 1898.)

PELVIC EXAMINATION.

Jayle (*La Presse Med.*, June 22, 1898) says that there are great advantages to be gained in the examination of difficult gynæcologic cases from an inverted inclined position of the patient. This position is essentially that known as Trendelenburg's, except that the patient instead of hanging by her knees, rests with her shoulders against two blocks, whilst the head is raised upon a cushion. This avoids the unpleasant rush of blood to the head, and at the same time it leaves the pelvis free from any strain and easily movable as the examiner may desire. (Medical News, July 23, 1898.)

PERITONITIS, PELVIC.—Surgical Treatment in.

Dr. Cullingworth, at the British Medical Association meeting 1898, said that personal experience has led him to regard the following signs and symptoms as being strongly suggestive of the need for operative interference. (*a*) The presence of a definite, more or less fixed, irregular swelling in one or both posterior fossæ of the pelvis, larger in size than would be accounted for by the matting together of a merely thickened tube and a normal or slightly œdematous ovary, and accompanied with pain and fever. If such a swelling is found to be increasing in size in spite of rest and the local application of warmth the suspicion that pus is present in appreciable and

dangerous quantity almost gives way to certainty. (*b*) The occurrence during an attack of acute inflammation of the uterine appendages of a tense globular cystic swelling in the pouch of Douglas. Whether this proves to be an intra-peritoneal abscess or a tense encysted collection of serum the indications for surgical relief are equally positive. (*c*) The outbreak of recurrent attacks of pelvic peritonitis in a patient known to have had an acute salpingitis, in whom there has remained a quiescent but obvious swelling in the posterior part of the pelvis. In such cases there is generally a pyosalpinx or an ovarian abscess. (*d*) The sudden appearance of symptoms of general septic infection in a patient with a more or less definite history of pelvic inflammation and a localised swelling above the vaginal roof. Such cases urgently need surgical intervention. They will often be found to be examples of tubo-ovarian abscess. The above are instances of suppurative inflammation of the appendages. In cases of non-suppurative inflammation gradual recovery may usually be expected to take place without operation. But operative interference is indicated even here if there is reason to suspect complications such as incipient cystic disease of the ovary, or if the circumstances of the patient being such as to render it highly important that she should be restored to health quickly, and the alternatives having been frankly explained to her, she should decide in favour of operation. With regard to the choice of time for operation it is no doubt wise, in the majority of cases, to defer operation until acute symptoms of localised peritonitis have subsided. Exceptions to this rule frequently occur, as, for example, where a rapidly increasing elastic swelling in Douglas's pouch or in the lower part of the abdomen indicates acute suppuration and again where the symptoms point to septic absorption. (From The Lancet Report, August 6, 1898.)

PREPARATION OF PATIENTS FOR GYNÆCOLOGICAL OPERATIONS.

For minor operations on the vagina, the external parts are shaved and thoroughly scrubbed with soap and water; the vagina is douched out with creolin lotion, and well washed out with the fingers and soap. For vaginal cœliotomies the vagina is douched and plugged twice with iodoform gauze the day before the operation; on the day of operation the plugging is removed, and the vagina thoroughly douched, previous to the administration of the anæsthetic. For ventral cœliotomies, the skin of the abdomen is washed with soap and water and ether the night before operation, and a compress soaked in corrosive and glycerine, 1 in 100, applied. This is removed when the patient is on the operating table; the skin is again washed with

ether, and finally with corrosive sublimate solution, 1 in 500. For abdominal hysterectomies the two last methods are combined. The patient is given a purgative thirty-six hours before, and an enema the morning of, operation. She is brought into the operating theatre—which is kept at a temperature of 70° to 75° F.—dressed in a sterilised dressing-gown and long woollen sterilised stockings. No blankets are allowed, as the room is sufficiently heated. (From Drs. Purefoy, Wilson, Jellett, and Lyle's Report of the Dublin Rotunda Hospital, Dublin Journal of Medical Science, July, 1898.)

PRESENTATIONS, SHOULDER.—A New Method in. (By A. J. Turner, M.D., Durh.) If there is one form of presentation in midwifery practice which a busy practitioner dislikes more than another to encounter, I suppose it is the shoulder, especially if well advanced before it comes under his notice. I have therefore been prevailed upon to describe a method which I have made use of for the last ten years, for though happily these cases are comparatively rare it has been of great practical value in five. In the first stage, the arm of the fœtus being protruded, it is doubled at the elbow, the fingers resting on the shoulder, forming as it were the point of a wedge which is now pushed back again into the uterus, in the interval of the pains, the upward movement being continued by the operator's bent forefinger pressed against the shoulder. In the second stage the accoucheur's middle finger is extended and by preference placed in the mouth of the fœtus or on some firm bony point of the head. Now, with the assistance of the operator's other hand external to the mother's abdomen, the head is drawn into a better position, where, should the pains still be strong, it may be left to nature, or the instruments applied if considered advisable. This method saves all efforts at podalic version, over-distension of the uterus by the addition of the hand (only two fingers actually entering the uterus), as well as decapitation, &c. It may be made use of after the arm has been protruded for some time, and takes but a few minutes to perform. The cases alluded to had been in hand for from one to ten hours before coming under my care, and in all of them the infants have been born alive with the exception of one, in which the arm had protruded for ten hours, and was then quite black from congestion, and in which the infant gave but a few spasmodic movements after delivery. (The Lancet, December 3, 1898.)

Presentations, Occipital.

In the pelves which show diminution of the conjugate diameter arising from rickets in childhood, the sacral promontory projects

too much, and the pelvic cavity is too much encroached upon by the sacrum to allow readily the movement of extension. This happened in the case I have described. Here I found that the more the child's head was forced down into the pelvis, the more resistance it encountered, especially as it happened to be a child of more than average size. Owing to this cause it had to undergo an amount of the moulding process which seriously compromised its safety, as the event proved. I think I never saw such an elongation of the occipito-mental diameter, except in a stillborn child, as this was. It exceeded the average length by at least two inches, and the large caput succedaneum which had formed over the posterior fontanelle had added still more to its apparent length. When the head thus becomes distorted by long pressure, it loses its round shape, and, as Spiegelberg remarks, assumes a wedge-shape form. Under these circumstances it is very difficult to secure a firm grasp of the head with the forceps; and the instrument either slips off, or adds still more to the injurious pressure which the child's head has already endured. Such complications as these render labours, when the occiput presents, painful, tedious, and difficult for the mother, and dangerous to the infant. (From Dr. Swayne's article in the Bristol Medico-Chirurgical Journal, June, 1898).

SCHLEICH'S ANÆSTHESIA IN GYNÆCOLOGY.

Kleinhaus of Prague (*Monats. f. Geb. v. Gyn.*, June) reports his experience of 13 cases. The solution was in every case sterilised after preparation, and cannulæ with special curves were employed for the injections. In plastic operations on the perineum six to eight injections generally sufficed, and for anæsthesia of the perineum only two injections below the insertions of the labia minora. The infiltration of the tissue did not prove any real impediment in the operation. In laparotomies no local anæsthesia was attempted inside the abdominal cavity, and, contrary to other observations, the ligature and amputation of the stump did not cause any pain. One ovarian tumour was so removed, though adherent, but in another adherent case narcosis was necessary. In all cases recovery was uninterrupted. (Epitome, British Medical Journal, October 8, 1898).

SEPSIS, PUERPERAL.

(By Dr. Paul F. Mundé, New York.) Among various things the first step in the treatment should be the freeing of the uterus from foreign substances, which may be done with the finger or the blunt curette which was introduced by the author. The cavity may then be irrigated with a mild solution of permanganate of potash. He very seldom employs bichloride

of mercury, and never stronger than one in ten thousand. Iodoform pencils do no particular good, and mask the odour and character of the discharge. The endometrium may be packed with iodoform gauze when it is desired to bring about contraction and reduction in the size of the uterus. The curetting of a septic endometrium removes tissues which have already undergone inflammatory obliteration of their absorbent vessels, and so does more harm than good by laying open fresh channels for infection. It is better to apply to such an endometrium a strong solution of chloride of zinc, tincture of iodine, or iodised phenol, and then to wash away the loose débris with sterilised water and to pack the cavity with iodoform gauze, which should be removed within forty-eight hours unless the symptoms call for its earlier removal. When the uterine cavity is entirely empty, even though there be general sepsis, there is no use in giving intra-uterine irrigations. When pelvic cellulitis, peritonitis, or salpingitis is detected, attention should be directed towards the local condition. The medicinal treatment, unfortunately, is not satisfactory. If the patient can be kept alive by means of stimulants and nourishing food until nature has thrown off the septic germs she probably will recover. If her stomach gives out and nourishment and stimulants are not retained, the disease wins. The objection to the coal-tar derivatives is that they mask the fever and depress the heart. The speaker does not hesitate, when the heart condition warrants it, to give phenacetin in 3 to 5-grain doses combined with caffeine. A few hypodermics of ergot may be useful to keep up steady contraction of the uterus. In conclusion, he spoke of the recently introduced treatment of septic infection by means of antistreptococcic serum. His experience was limited to three cases, all of which seemed desperate. From three to six hypodermics of ten cubic centimetres of serum were injected at intervals of from four to twelve hours, and all three patients recovered. (Abstract of an address given before the American Gynæcological Society. Medical News, July 9, 1898.)

SYMPHYSIOTOMY.

Cæsarean section is often done nowadays in cases where the pelvis would admit of delivery by the natural route. For instance, one woman whose true conjugate diameter is $2\frac{3}{4}$ inches, has twice been delivered in America by abdominal section. Her pelvis is described as of the "rickety flat" variety, and has a roomy transverse diameter. Some would have thought this a good case for symphysiotomy. This, like the major operation, continues to grow in popularity, and is done each year with slighter excuse than in the previous one. Lepage has recently described eight cases (*Annales de Gyn., &c.*, March, 1898); and

Pinard details seven cases, one fatal to the mother, which occurred in his practice during the year 1897, bringing up his total to eighty-three cases (*Annales de Gyn., &c.*, April, 1898). I notice that several women upon whom symphysiotomy has once been performed have been delivered spontaneously on subsequent occasions. This suggests that the operation may cause permanent enlargement of the pelvis. But it must be remembered that many women have been symphysiotomised after having on previous occasions been spontaneously delivered, which suggests another conclusion. However successful the cutting operations may become in hospital, it does not seem likely that they will compete with craniotomy in private practice for some time to come. (Dr. Gow's Periscope in the Practitioner, July, 1898.)

TAMPONADE, THE.

(By Dr. Dudley, *Philadelphia Medical Journal*, June 18, 1898). The principal indications for tamponade are (1) inflammation, (2) hemorrhage. For the former it may be used as a means of pressure, as a vehicle for the application of medicinal substances, or, lastly, for drainage. For the latter it is inferior to ligature in vaginal bleeding and has the two disadvantages of inefficiency and being cumbersome. On the important subject of intra-uterine applications, he commences by asking a question much to the point. "How many times have you permanently arrested a long-standing uterine discharge by means of topical applications to the endometrium?" The reasons for failure he gives are that the treatment, as usually applied, fails to reach the disease, and in the vast majority of cases it is not only not indicated but may even do harm. He then discusses cauterisation, electricity, intra-uterine gauze tamponade, and curettage; and concludes with the following statement:—"If the above premises are true, it follows that a very large proportion of the women who formerly crowded the reception-rooms of the gynæcologist for intra-uterine and other local treatment should be treated by medical or surgical means or by both combined. . . . The legitimate field for routine topical applications in gynæcology is limited." (From Dr. Gow's abstract in the Practitioner, October, 1898.)

UTERINE CANCER.—Operation for.

As to the choice of operation, as Sir John Williams pointed out in his address before the International Medical Congress at Berlin in 1890, statistics at present fail to show us whether the total mortality of kolpo-hysterectomy exceeds the mortality of supravaginal amputation of the cervix, when performed with the same care. As he says:—"Cancer of the uterus *per se* is an indication

for total extirpation of the organ. The brilliant results obtained after total extirpation by our *confrères* in Germany show that, in their hands, the danger of the operation has been reduced to comparative insignificance. From over 70 per cent. the mortality was first reduced to 28, then under 20, then under 10, and now in some cases as low as 5 per cent. This is, perhaps, the greatest of the many marvels of modern surgery. The largest series of collected cases is probably that by Byrne, who collated 1,273 cases of kolpo-hysterectomy with an average mortality of 14·6 per cent. It is certain that the mortality of the operation in good hands is now less than this. Leopold, of Dresden, has published a series of 80 vaginal hysterectomies with a mortality of 5 per cent., not having lost a single patient of the last 52. Imitri le Ott recorded 30 vaginal extirpations without a death. Fehling, in 1897, recorded 100 cases of total vaginal extirpation of the uterus, 73 being for malignant disease, with only two deaths. On the other hand, Pozzi, in 1890, estimated the average mortality of supra-vaginal amputation of the cervix in the hands of good operators as high as 11 per cent. If, then, it should be proved that there is not much to choose, as to primary mortality, between supra-vaginal amputation of the cervix and kolpo-hysterectomy, it would seem to be reasonable to elect for the latter operation as offering a better chance of extirpating the whole disease, especially as Sir John Williams points out that there are cases in which cancerous masses are found in the inner superficial layers of the body of the uterus together with an early stage of cancer of the cervix. Mr. Jacobson, in his "Operations of Surgery," 1897, sums up thus :—Now it is believed by most authorities that total extirpation is a better operation than supra-vaginal amputation in cases where the cervix alone is affected. It is believed to be so because the cancer is occasionally found to have extended to the body before the tissues surrounding the cervix have become involved, and because the operation itself is not more difficult, and, practically, not more dangerous." I hope I have brought forward enough evidence, not only to show that radical operations for uterine cancer are amply justified even if they do no more than prolong life in greater comfort, and mitigate the horror of death by this disease, but that we may fairly claim that this procedure offers a reasonable hope of complete cure. (From Dr. R. Farrar's paper in the Quarterly Medical Journal, October, 1898.)

UTERUS, CANCER OF.

Local Examination.—In the early stages, the conditions present are not easily recognisable to the touch. If the whole of the cervex is not affected, the finger recognises a slightly roughened

hard patch different from the remainder of the tissues. Scratching this surface with the finger-nail causes bleeding, and also detaches portions of the tissue. Auvard, in the *Bull. Gen. de Therapeutique*, formulates the rule that "every ulceration of the cervix which bleeds readily on contact, and renders the tissues friable, is due to a malignant growth." Not only scratching the surface, but the mere contact of the nozzle of an injection syringe is sufficient to set up bleeding. The farther advanced is the disease, the more easily is it recognised by the finger, but the conditions vary according as the growth is vegetative or eroding. In the former, the well-known cauliflower excrescence is found, which is apt to bleed profusely if great care is not taken in the digital examination. In the latter, the finger enters a more or less spacious cavity in the vaginal roof, bounded by indurated walls, in which fistulous apertures may be found. In both cases, the only point of further importance than the recognition of the growth is the question whether or not the case admits of operative interference. The speculum should never be used except in early cases, in which its aid may be necessary in establishing the diagnosis. In advanced cases, it only causes hemorrhage and useless suffering. (From Dr. Eden's summary in Treatment, October 27, 1898).

Uterus, Perforation of, during Curetting.

(By Dr. Glaeser, *Centralblatt für Gynæcologie*, No. 6, 1898). The patient was middle-aged, and had been confined three months previously. The uterus was bulky, and for the purpose of examining it the sound was introduced. Without any apparent difficulty it entered the uterus up to the handle. It was withdrawn, and passed again with a similar result. Glaeser considered that the uterine wall was perforated, and decided to extirpate the uterus per vaginam. This was immediately performed. After removal four small perforations were seen to the left side of the fundus. The uterus was not large, and the walls were of normal thickness. The fundus, however, was extremely soft, and showed fatty changes; the cervix was of a natural consistence. The sound, it was seen, could be readily passed through the uterine wall without any sensation of resistance. From this observation it is evident that the uterus may after labour or abortion be so softened that perforation can readily occur, and in these cases, also, the curette may bring away a large portion of the uterine wall without the use of any undue force. (Medical Chronicle, June, 1898.)

VAGINA, NEW GROWTHS OF THE.

R. Klien (*Monatschrift für Geburtshülfe und Gynæcologie*, Mai, 1898) gives a *résumé* of the most important works dealing with

the subject of vaginal growths published during the last three years. He points out that fibromyoma and sarcoma are more frequently found on the anterior vaginal wall, carcinoma on the posterior. As regards the frequency of primary vaginal carcinoma the following statistics were given:—In 5,341 gynæcological cases in Vienna hospitals this disease was found only 15 times. A. Martin had four cases among 5,000 patients. Schwarze found records of 84 cases in 35,807 cases in the Berlin Frauenclinic. In the Prag gynæcological clinic 38 cases occurred among 8,951 patients. Klien thinks that the disease occurs primarily more frequently than is believed. A number of cases are never seen by the physician until both uterus and vagina are affected, and most of these are usually classified as examples in which the vaginal carcinoma is secondary to the uterine disease, whereas it is likely that the uterus is often affected secondary to the vagina. The disease is found mainly between 30 and 60 years of age. Statistics do not show any special relationship to multiparity. Primary vaginal cancer occurs in two forms, papillary cancroid, the most frequent, and the infiltrating variety. The latter tends to grow around the vagina in the form of a ring. Multiple carcinomatous nodules are very rarely found. Extension of the disease leads especially to bladder and rectal complications, compression, perforation, &c. The ureters may become involved, leading to renal trouble. The disease may spread to the vulva. The cervix is not often affected. Metastases in other parts of the body are rarely found. The disease may seriously complicate labour. Rarely may uncomplicated delivery take place. Among the cases described, premature labour, forceps application, embryulcia, laparo-elytrotomy and Cæsarean section had to be employed. Among 12 cases, 10 mothers and 7 infants died. (Dr. J. C. Webster's abstract in the Montreal Medical Journal, October, 1898.)

Vagina, Bacteria of the, and their Significance.

Dr. J. Whiteridge Williams, of Baltimore, read a paper based on 100 cases in pregnant women. After reviewing the many investigations of this kind that had been made, and noting the conflicting opinions, he detailed his own results. In his cases he did not find a single streptococcus or staphylococcus aureus. The different results obtained by various investigators, he said, were entirely explicable by differences in technique. Those who had obtained positive results had introduced a large speculum and taken the secretion with a platinum needle, but the introduction of such a large object carried past the hymen the organisms lying at the ostium vaginæ. To obviate this, he had used a small scoop, and, in introducing it, had spread the

hymen and labia widely apart so as to avoid contact. Consequently organisms were not introduced from without, and no pathogenic germs were introduced into the vagina. The author, therefore, concluded:—(1) As the vagina did not contain pathogenic germs, auto-infection with these germs was impossible; (2) if the vagina contained streptococci frequently, a vaginal examination with the sterile finger would be very dangerous, which it was not; (3) the vagina might occasionally contain bacteria which might give rise to sapræmia by auto-infection, but this was usually quite mild; and (4) death from puerperal infection was due to infection from without, and usually to neglect of aseptic precautions on the part of the physician or midwife. (Medical Record, June 4, 1898.)

VOMITING OF PREGNANCY.

Bacon (*American Journal of the Medical Sciences*, June, 1898) thus sums up his conclusions:—(1) The abnormal irritability of the nervous system, including the vomiting center, is to be allayed by keeping the patient in the horizontal position, by attention to the skin and bowels and kidney, using rectal and, if necessary, hypodermic injections of salt solution. (2) The hysterical condition which is so-commonly found present should be controlled by strengthening the will and influencing the dominant idea of the patient. (3) All sources of peripheral irritation should be discovered and treated. (4) In extreme cases subcutaneous saline injections serve the threefold purpose of (*a*) dilating the blood and increasing vascular tension; (*b*) eliminating toxins through renal and intestinal emunctories; (*c*) furnishing two most important kinds of food; (5) induction of abortion is never indicated. At a stage when it is safe and efficient it is not necessary, and in extreme cases it adds greatly to the danger, rarely stops the vomiting, and can be substituted by the artificial serum. (Medical Age, June 25, 1898.)

Medicine.

GENERAL MEDICINE AND THERAPEUTICS.

Art. 1.—LOCALISED OUTBREAK OF ENTERIC FEVER IN AN ASYLUM.

By Edwin Goodall, M.D. Lond., B.S., M.R.C.P.,
Medical Superintendent, Joint Counties Asylum, Carmarthen.

[The following is included here on account of the preventive inoculations. The first part of Dr. Goodall's paper on the investigation into the cause of the outbreak is omitted here.]

Since the localised outbreak now dealt with appeared to be due to local insanitary conditions, and these probably not to be detected easily or removed rapidly; and since it was not feasible to remove the unattacked patients from the two wards concerned, which are observation wards, I considered it advisable to inoculate them, and also the patients working in the laundry, with the anti-typhoid vaccine, prepared by Professor A. E. Wright, of the Army Medical Schools, Netley. My thanks are due to Professor Wright for the courtesy and promptitude with which he supplied us with the vaccine, and for the subsequent examination of the serum from vaccinated cases. One hundred and eleven cases were inoculated. The fact that none of those inoculated got the disease does not prove anything, in my view, in regard to the preventive powers of the vaccine; for I believe that the source of the infection was removed by November 10 (when the disinfection and disuse of the faulty drain was complete), a date, that is, prior to the commencement of the vaccination (Nov. 17). I simply allude to this procedure here because I think it worth while recording that the inoculation of a considerable number of individuals, many of them far from robust, was attended with no anxiety. Eight minims (0·5 ccm.) were injected into the flank, and not more than once in each case, since no more than temporary immunity was aimed at. All cases were kept in bed from the time of injection until the temperature became normal. Local signs appeared in from twelve to twenty-four hours, disappearing in two or three days. These consisted merely in slight swelling and redness around the needle-track. In

two cases the swelling approached a closed-fist in size. In two others there was no local reaction. Most of the patients being insane in a marked degree, it was practically impossible to elicit information as to symptoms. The more sensible complained of soreness and stiffness in the side injected, feeling generally unwell. There were one or two complaints of sickness, but only two actually vomited. With these trifling exceptions the appetite was good throughout, in all. No treatment was thought necessary in any case. No mental change was noted. Temperatures were taken from the date of injection until they became normal, which was in from four to seven days. In seventy-nine cases the temperature changed between 99 and 100 deg., in eighteen it was between 100 to 101 deg. when at the highest, but commonly below 100 deg.; in eleven, it rose to between 101 and 102 deg., but soon subsided to below 100 deg. In two the temperature never rose above normal. (The blood from one of these was among those sent for examination, as to its reaction. It gave a marked reaction in dilution of one in fifty.) In the one remaining case the temperature was 102·2 deg. on the morning following injection, and 103·2 deg., that evening, remained persistently high, and was 102 deg. in the morning at a date when the temperatures of all the other cases injected at the same time had fallen to normal. This was a case of stupor. Up to the time of injection the man had not been observed to be ill; strangely enough, his temperature was only taken because of the injection. It quickly became apparent, however, that he was seriously ill, and the conclusion was formed that this was already a case of enteric fever at the time of injection. With this view Professor Wright entirely concurred. The man was in a marked state of stupor, when brought under notice—as above, and the condition of his health was only to be ascertained by objective indications. He was isolated, and passed through what appeared to be an ordinary attack of enterica, with high temperatures and fairly severe symptoms. I may add that he has since recovered from the attack, and it is interesting to record that his mental state has very greatly improved. Whereas before the attack he was with difficulty got to move, was silent, would stand in one place for hours, with cold and cyanosed extremities, and required to be dressed; he now is a useful ward-helper, takes an interest in what passes, speaks and acts intelligently; in fact, he is getting well. The patient has since been discharged recovered.

I may here diverge momentarily to mention a case of acute mania, here in 1893, which entirely recovered mentally, and was discharged well, after an attack of enterica of about seven weeks' duration. Immediately before the illness the mental state was one of acute mania. Specimens of the blood of

several cases vaccinated were taken on the seventh and tenth days; with these Professor Wright obtained the characteristic reaction in weak dilutions, and he considered that the procedure had been sufficient in these cases to secure temporary immunity. —*The Medical Press, August* 24, 1898.

2.—TREATMENT OF HEMORRHAGE FROM THE BOWELS IN TYPHOID FEVER.

Hemorrhage in typhoid fever may occur in the earlier or later stages. Before the latter part of the second week, hemorrhage arises from rupture of engorged vessels in the infiltrated patches; in the third and fourth week and later, it is due to ulceration and sloughing. The practitioner will generally be able to refer hemorrhage in typhoid fever to the one or the other of these causes, and will naturally regard the earlier hemorrhages as of the most favourable prognosis, demanding no special modification of the ordinary treatment; before the hemorrhages of the final stages he will often stand appalled, and every kind of treatment may be ineffectual. These ultimate hemorrhages frequently prove fatal by the abundance of the blood-loss which cannot be arrested by any medical or surgical means at present known; peritonitis by perforation often carries off the patient. If the hemorrhage of the early stages may be salutary rather than dangerous, relieving the congestion at the primary foci of the disease, hemorrhage from ulceration would seem to demand the most prompt and energetic measures. Unfortunately we are still obliged largely to treat these hemorrhages empirically. The junior practitioner will exercise caution before he sets aside therapeutic methods which are the result of the wide experience of acute and careful clinical observers, for methods which may be the result of theory rather than of exact knowledge.

And here we take exception to an able article in the July number of the *Therapeutic Gazette*, in which the writer condemns the treatment of the hemorrhages occurring in the later stages of typhoid fever by opium and astringents as unscientific and pernicious. The opium treatment of typhoid hemorrhages may be regarded as one of those methods which have been empirically acquired. It has long been taught on the authority of clinical experience that small doses of opium have a restraining influence on internal hemorrhages; such use of opium was counselled as far back as Sydenham and John Cullen and by earlier authorities in intestinal and other fluxes, and at the present day it would be hard to persuade the practitioner who

is called to prescribe for an alarming hemorrhage from the bowels with shock and collapse that opium is wholly contra-indicated as being baneful and dangerous. We have said small doses rather than large, recognising that there is no indication to paralyse the organic functions, lock up the secretions, or unduly restrain the peristalsis of the intestines. There is a marked difference in the action of opium according to the dose given and the combination, and it is a matter of common experience that this remedy is often of great efficacy in diarrhœa and dysentery when combined with laxatives, as rhubarb, which keep up rather than arrest the action of the bowels. We do not profess to know or to explain just how opium acts as an anti-hemorrhagic agent. We do not believe that opium is given in intestinal hemorrhages "to paralyse the vasomotors," as the *Therapeutic Gazette* writer intimates, and believe that its action is too complex to be included in any such formula as that. At least this was the view of Vulpian after careful experimentation with opium and its salts. Nor do we think that it is the intent of the practitioner who prescribes opium or morphine in intestinal hemorrhages absolutely to arrest peristalsis, as the *Gazette* writer intimates. He would not so much arrest intestinal peristalsis as diminish it. He does find an indication to put the bowel at rest as far as this can safely be done. If the existence of pent-up bacterial products and accumulated blood-clots are a menace to the patient, if meteorism is on the increase, the practitioner will take some safe means of clearing out the bowels, whether by saline laxatives or cold enemata; at the same time he may deem it necessary to continue the opium treatment by mouth or hypodermically. It is a little surprising that the writer in the *Therapeutic Gazette* does not allude to the turpentine treatment of the hemorrhages of typhoid fever, proposed more than fifty years ago by Dr. Copland in *The Lancet*, and highly extolled by many subsequent authorities. Murchison used to prescribe turpentine in 15-minim doses along with 10 minims of laudanum in mucilage every three or four hours, and says that this combination was almost invariably successful in arresting the bleeding. Turpentine has the merit of being antiseptic as well as stimulant and styptic.

With regard to the exhibition of acetate of lead, tannin, perchloride of iron and even ergot in the hemorrhages of typhoid fever, perhaps the experienced practitioner who has seen many cases die in spite of the free exhibition of these astringents and a few recover, may be allowed, with Liebermeister, to indulge some scepticism with regard to their utility. It is not absolutely proved that these astringents reach the bleeding focus to exercise there any styptic action.

It has been said that authorities are not united as to the treatment of the hemorrhages of enteric fever, some favouring ice-cold compresses over the abdomen and cold lavements, and others condemning these measures as irrational and pernicious. There is, doubtless, more general agreement as to the utility of the opium treatment. Dr. McCorkle, for instance, affirms that opium has "a marked sustaining action on the heart," and a tonic effect on the nervous system. He thinks it a great cerebral and spinal stimulant, and an "equaliser of the circulation." In the later stages he has often withdrawn the opium and found the ataxic symptoms become more pronounced, the heart's action feebler, with return or increase of delirium, all of which symptoms have abated on resumption of the opium. He regards it as the sheet anchor in hemorrhage, not because it paralyses, but because it stimulates the vasomotor system! In looking over our files of medical journals we everywhere find similar testimony, and those who still cling to the opium treatment of intestinal hemorrhages have the support of the very best clinical authorities for that theory and practice.—*A leading article in the Boston Medical and Surgical Journal, September*, 1898.

3.—CHOLECYSTITIS IN TYPHOID FEVER.

By J. M. Da Costa, M.D., LL.D.

[The following is only a part of Dr. da Costa's interesting paper on "Jaundice in Typhoid Fever." After discussing the more constant symptoms of cholecystitis, such as pain and tumour, and the less marked ones, such as jaundice, nausea and vomiting, and chills, the author deals with the diagnosis and the discrimination between the different forms of typhoid cholecystitis, and finally concludes with the treatment.]

As regards the diagnosis of typhoid cholecystitis, this is impossible with any certainty, except where tumour is present, though it may be suspected if there be nausea and vomiting, a sense of weight, and sensitiveness over the gall-bladder. But the occurrence of tumour and of pain and tenderness at or near the seat of the gall-bladder make the diagnosis not difficult. The most likely error is confounding the malady with an appendicitis. As a rule, the seat of pain and tenderness and swelling is different; in the one case in the right iliac fossa, in the other in the region of the gall-bladder. But we cannot trust implicitly to this; as in appendicitis, especially at its upper part, or where the appendix is not normally situated, the localisation of the symptoms may be high up; and in

cholecystitis the pain and tenderness may not be most marked over the gall-bladder, and the swelling may be very difficult to define. An exact discrimination of the different forms of typhoid cholecystitis cannot be always made. They are all most likely to come on late in the disease, or after convalescence has been established, and all, whether with or without perforation, as Hagenmüller has clearly established, are prone to be associated with local peritonitis in the neighbourhood of the gall-bladder. Where there are abscesses in other parts of the body, and we can exclude pylephlebitis and hepatic abscess, a suppurative cholecystitis may be inferred, if pain and tumour be present. If there be a history of biliary colic and gallstone, or if this arise in the progress of typhoid fever or not long subsequent to it, signs of cholecystitis mean suppurative cholecystitis. I think, too, though there are not many observations on this point, that examinations of the blood will help us materially. We know through the researches of Thayer that in typhoid fever the number of white blood-corpuscles varies but little from the normal standard, about 6,000 per c.cm. Marked leucocytosis, if there be symptoms of cholecystitis, points to its being suppurative, as in Mason's case and in Anderson's case, where there was perforation. On the other hand, in a case of Osler's that recovered, there was no leucocytosis, and we may infer the cholecystitis not to have been purulent. In laying stress on leucocytosis we must, however, exclude abscess of the liver, in which condition it may also exist. Yet here the local symptoms are different: there is less pain, no tumour over the gall-bladder, and in doubtful cases I should attach much importance to the occurrence of chills. The analysis in this paper has proved their extreme rarity in cholecystitis of any form, whereas they are very common in abscess and in pylephlebitis, as is sweating. In none of these conditions can we lay much stress on the presence or absence of jaundice. There are cases of gall-bladder affection in typhoid fever in which there is mere distension with bile or a watery fluid. They have been supposed to be due to retention of bile owing to nervous disturbance attending the fever, analogous to the retention of urine; or they may be the result of obliteration of the cystic duct. No means exist of distinguishing these cases during life from acute cholecystitis, except it be by the absence of severe pain and very marked tenderness. Then it is likely that they are really instances of bacillary infection of the gall-bladder, and that the typhoid bacilli will be found in the fluid, only marked inflammation has not been induced.

Perforation of the gall-bladder has as its chief symptoms suddenly developed or intensified pain, collapse, and peritonitis. In some instances that have been reported there is also marked

drop of temperature, as in the cases of Bonamy and of Bond. The effect on the tumour is often a decided lessening or a disappearance. Peritonitis, which may remain local, as in the case of Hawkins and others, develops, and may lead to encapsulation of the discharged contents of the gall-bladder. On the other hand, a subsequent general peritonitis may occur. The course is often a comparatively slow one, two of the reported cases, Ranvier's and Archambault's, not dying until the twelfth day after the perforation. It is evident how very similar the symptoms are to those of intestinal perforation. Gall-bladder perforation can be, indeed, distinguished only by the seat of the pain and the previous existence of the tumour. Should jaundice be present it would be an additional aid in discrimination. On the other hand, intestinal hemorrhages preceding the symptoms of perforation, and rapidly developing general peritonitis, belong more strictly to the intestinal lesion ; local peritonitis in the upper part of the abdomen on the right side is more characteristic of gall-bladder perforation, as is a slower progress of the symptoms. Fall of temperature, too, attending the collapse, occurs much oftener in intestinal perforation in typhoid fever than in gall-bladder perforation in the same disease.

The treatment of the jaundice attending these different hepatic affections will be guided by our recognition of the probable cause. Those which are due to blood infection and to the finer parenchymatous changes in the liver cannot be reached by any special treatment, which must be that of the grave underlying typhoid condition. I will, however, point out that two of my cases recovered while taking decided doses of mineral acids, and this was also the result in two of Murchison's cases. In abscess of the liver, as well as in pylephlebitis, large doses of quinine may be employed. In the ordinary form of cholecystitis, recovery has followed applications of leeches over the swelling, followed by poultices. Besides the general treatment of the typhoid state, attention must be paid to the character of the discharges from the bowels ; when very dark and showing vitiated bile, small doses of mercurials should be given. Leudet's case got well under calomel and under frictions with belladonna. The suppurative cases require support, and, as soon as we are reasonably sure of their character, surgical interference, the admirable outcome of which was seen in several cases. Among the perforation cases I know of only one recovery without operation, the case of Salzman, which discharged through the abdominal wall. An operation alone promises success, and how well it may succeed is proved by the results of Williams and Shield and one of the cases of Osler and Halsted.—*American Journal of Medical Science, July*, 1898.

4.—WIDAL'S TEST FOR TYPHOID.

The fact that the addition of the serum of persons suffering from febrile attacks other than enteric fever to a broth culture of typhoid bacilli has frequently been followed by the agglutination of these microbes — a phenomenon alleged to be characteristic of typhoid fever—cannot but tend to throw a doubt on diagnoses based on so-called positive results, and, in the minds of persons inclined to be incredulous of the conclusions of bacteriologists, to deprive it of all diagnostic value. But the recent researches of C. Fraenkel, O. Förster, and R. Stern, and still more of Scholtz, have clearly demonstrated wherein the fallacy lies and how the error may be entirely avoided. Three facts stand out prominently in all recorded observations—first, that the reaction may generally be obtained in the first, and always in the second, week of an attack of enteric fever; secondly, that the serum retains this property for months and years afterwards; and, thirdly, that, apart from the error which this may induce in the event of such a person being subsequently attacked by some other febrile disease, the reaction is not infrequently obtained when the patient is not suffering, and has not previously suffered, from enteric fever. Dr. Scholtz, who has studied the whole literature of the subject, and as assistant in the Hygienic Institute at Halle University, has, in the laboratory, conducted several hundred examinations of the blood of undoubted and of doubtful cases, as well as of cases of a non-typhoid character, has come to the conclusion that it is quite possible to eliminate all sources of error, and to attain an unerring certainty by the observance of a few simple precautions, which practically resolve themselves into adequate and accurate dilution, with occasionally a repetition of the examination at an interval of about a week after the first. The explanation is, first, that while this agglutinative action may under certain conditions be exhibited by the serum in many other febrile states, provided the dilution is not carried too far, it is always lost when a point is reached at which that exerted by the serum of typhoid is practically unimpaired (indeed, so long as any positive reaction is obtained, its diagnostic value increases with the degree of dilution); and, secondly, that while in the progress of a typhoid fever the successive applications of the test will show a constant rise in the activity of the serum, that which owes its existence to the patient having passed through an attack of typhoid some months or years previously will remain stationary throughout the present illness if it be of a non-typhoid character, although exhibited in dilutions which would otherwise have caused its disappearance. Widal himself originally practised a 1 : 10 dilution, and Grünbaum 1 : 15, but

Mesnil de Rochemont obtained positive indications in non-typhoid cases with 1 : 25. Grüber and Stern then proposed 1 : 30, but even this occasionally proved ambiguous, and there is no doubt that Förster, Kühnau, Sklower, and Scholtz are right in fixing 1 : 50 as the diagnostic limit or line of demarcation between conclusive and inconclusive observations.

The procedure practised and recommended by Scholtz is as follows:—The culture fluid having been kept for six or eight hours at a temperature of 37° C., to ensure the active growth of the bacilli, and the diluent having been prepared by sterilising some simple broth (not a culture fluid in which the bacilli have been killed), he makes a preliminary observation on equal parts of the serum and the fluid culture. Should the result be negative, nothing more is needed; but if positive, he proceeds to examine under the microscope the effects on 1 : 30 and 1 : 50 dilutions. He deprecates the use of dried blood if it can possibly be avoided. He agrees with Fraenkel that elaborate apparatus are wholly unnecessary, preferring a capillary pipette, graduated to drop $\frac{1}{100}$ c.cm. ($= \frac{1}{6}$ ♏). The highest dilution with which he has seen a positive reaction in non-typhoid cases was 1 : 25, and the lowest, at which it was lost early in a mild but genuine case of typhoid, was 1 : 45, though in the vast majority much higher dilutions are well borne. Thus 100 cases of non-typhoid febrile diseases, 19, or one in five, gave apparently positive indications in a dilution of 1 : 5, eleven of these in 1 : 10, seven in 1 : 15, three in 1 : 20, and one gave traces of reaction with 1 : 25, beyond which no agglutination was ever seen. On the other hand, ten consecutive cases of typhoid reacted unmistakably with 1 : 50, leaving no doubt as to the diagnosis; and in six cases of persons who had passed through attacks of typhoid at various periods from eight to fifteen years previously, positive results were obtained with dilutions of 1 : 12 to 1 : 25, on each of two or three weekly examinations. In one case which during life had presented no characteristic symptoms, he tested the blood for the first time after death, with a positive result in a dilution of 1 : 50, and the post-mortem examination showed all the confirmatory lesions. One observation, also made after death, was of a most interesting and suggestive nature. A typhoid patient, seven months pregnant, gave birth to an infant that died on the second day, and positive results were obtained with its serum even when diluted to the enormous extent of 1 : 250. Unfortunately no bacteriological examination of its blood or viscera was made, and the question therefore was undecided whether (1) the bacilli themselves had actually passed over into the fœtal circulation, or (2) the absorption of the toxins had stimulated the fœtal protoplasm to the production of "agglutinin," or (3) the agglutinin alone had been absorbed

ready made from the blood of the mother.—*The Practitioner, September*, 1898.

5.—BACTERIOLOGICAL AND CLINICAL DIAGNOSIS OF DIPHTHERIA.

By J. W. Washbourn, M.D., F.R.C.P.,
Physician to the London Fever Hospital, &c.

[The following is taken from Dr. Washbourn's very important paper. The views expressed in it will certainly commend themselves to all who have both clinical and bacteriological experience of this disease.—E.F.T.]

In faucial diphtheria the affection of the throat varies from a slight reddening and swelling without exudation up to the formation of a thick membranous exudation. When there is a thick membrane upon the fauces the case is almost certainly one of diphtheria. Nevertheless, it must be remembered that other affections of the throat may give rise to the formation of a membranous exudation indistinguishable from that produced by diphtheria. I have personally seen several cases of this nature in which thick membrane could be peeled off the fauces, yet the membrane, on repeated examination, contained no diphtheria bacilli, and the cases were not followed by paralysis. Much greater difficulty occurs in cases where the exudation is only slight, or where it is absent, or where it is of a pultaceous nature. Many of these cases cannot possibly be distinguished by the appearance of the throat from other inflammatory conditions. Sometimes the distribution of the exudation is exactly similar to that of follicular tonsillitis. In fact it may be stated that the appearances caused by diphtheria in the fauces may be similar to those caused by any other inflammatory condition, and that a throat having all the typical appearance of diphtheria may prove to be some other affection. Generally speaking, if the exudation spreads to the uvula and soft palate the case is probably diphtheria; while, on the other hand, if there is extensive destruction of tissue or the formation of an abscess the case is probably of some other nature. From the appearance of the fauces we can never be absolutely certain of our diagnosis, although we can often form a very good opinion. Let us see what other signs there are to assist us.

An enlargement of the sub-maxillary lymph glands is of some value. They are more frequently enlarged in diphtheria than in other inflammatory conditions, but we cannot say much more. We may, however, say that an enlargement of the glands when the faucial inflammation is slight, is strongly in favour of

diphtheria. Albuminuria is very common in diphtheria, even when the attack is mild. It may, however, be present in various forms of tonsillitis. When the glands are enlarged and albuminuria is present, the probability of diphtheria is still further increased. An extension of the inflammation to the larynx or the nose is strong evidence for diphtheria, but such an event may occur in other conditions. In scarlet fever it is by no means uncommon to get rhinitis, and sometimes the inflammation of the fauces extends to the larynx producing croup. The temperature is not much guide, but a continued high temperature is not usual in diphtheria; it is often as high as 104° F. at the commencement of the attack, but it usually subsides quickly. The subsequent occurrence of paralysis is often of assistance in the diagnosis of doubtful cases. Paralysis may occur after simple inflammation affections of the fauces, but under these circumstances it is decidedly rare. It thus appears that purely clinical observations are inadequate to establish the diagnosis of diphtheria. We will now see how far a bacteriological examination helps us.

No one will deny that diphtheria is a disease due to the invasion of the body with the diphtheria bacillus, whatever influences may be necessary for the attack to be successful. Consequently the absence of diphtheria bacilli from the part invaded is certain proof that the disease is not diphtheria. Experience shows us that a bacteriological examination proving the absence of diphtheria bacilli is very reliable. If, for example, no diphtheria bacilli can be cultivated from the throat in suspected cases of diphtheria after two or three examinations, we can be almost sure that the bacilli are not present. As a rule one examination is sufficient, but to be certain, two or three examinations should be made. A negative result then is very reliable; we must consider how far we can trust to a positive result.

As the result of considerable experience, I believe that bacilli resembling the diphtheria bacillus in morphology are seldom found in inflamed throats, except in cases of diphtheria. Consequently when the throat shows clinical signs compatible with diphtheria and bacilli are reported to be present, we are justified in concluding that the case is one of diphtheria. The question is, however, quite different in the diagnosis of doubtful cases of diphtheria of the nose, conjunctiva, or subcutaneous tissue.

In any case the whole subject of diphtheria of other mucous membranes than that of the fauces requires further investigation. What course should be adopted when diphtheria bacilli or bacilli resembling the diphtheria baccillus are found in a healthy throat? Ought the individual to be isolated? Unless

the bacillus has been proved by all the necessary tests to be a true diphtheria bacillus, we are certainly not justified in subjecting the individual to the hardships of isolation, and even then the question cannot be settled until we know how frequently true diphtheria bacilli are present in healthy throats. I personally believe that all individuals with true diphtheria bacilli in the throat or nose are infective, but I think that, with care, the risk of infection is not very great. Although isolation cannot be insisted upon, it should be practised when possible. In schools where diphtheria has broken out, and in scarlet fever wards of hospitals, a bacteriological examination of throats by the ordinary method is often of great service. We now examine systematically the throats of all the scarlet fever patients at the London Fever Hospital, and isolate as far as possible those with bacilli resembling the diphtheria bacillus in their throat. Since this method has been adopted we have had no outbreak of post-scarlatinal diphtheria. Whether this is due to the isolation or not, I will make no dogmatic statement; still the fact remains. Again, at a large school diphtheria kept breaking out. At the request of the medical officer, I examined bacteriologically every throat which had the slightest suspicion of abnormality. Over a hundred children were thus examined, and all those with bacilli resembling the diphtheria bacillus in their throats were isolated. The outbreak soon ceased, and no further cases have occurred.

We may conclude from the above that neither the purely clinical nor the purely bacteriological examination is adequate for diagnostic purposes, but that when the two methods are combined we can form a correct opinion upon the majority of doubtful cases of diphtheria.—*Journal of the Sanitary Institute, vol.* xix., *part* iv.

6.—REPORT OF THE ANTITOXIN COMMITTEE.

The Committee of the Clinical Society, after due consideration, decided to conduct the inquiry as follows :—(1) To test the effect of antitoxin on the mortality of diphtheria. (2) To analyse the evidence obtained as to the effects of antitoxin in proportion to the quantity administered; (*a*) on the course of acute disease; (*b*) on the complications and sequelæ. (3) To note any other effects of antitoxin. In order to obtain the necessary material it was decided to invite the co-operation of the General Hospitals, the Hospitals for Children, and the Hospitals of the Metropolitan Asylums Board. Eight hundred and thirty-two cases were analysed and tabulated by a sub-committee consisting of Dr. Sidney Martin, Dr. Pasteur, Dr. Washbourn, Dr. Hawkins, and Dr. Goodall. Upon examination 199 of the 832

collected reports had to be rejected, leaving 633 available for further analysis. For the purpose of comparison statistical tables of the results in diphtheria and its complications in cases not treated with antitoxic serum are introduced. These were partly obtained from the published reports of the superintendents of the Asylum Board hospitals and were partly compiled from the records of the general hospitals.

In analysing the evidence afforded by these 633 cases of the effects of antitoxin especial attention was paid to the following points:—(1) The effect of antitoxin on the general mortality. (2) The effect of antitoxin on the laryngeal diphtheria and the extension of membrane from the pharynx to the respiratory passages. (3) On the occurrence of paralysis. (4) On the symptoms attributable to antitoxin itself. (5) To the conditions under which death occurred.

It was considered desirable to group the cases in accordance with the seat of the membrane, and the groups were thus arranged:—(1) Those in which membrane was present on pharynx only. (2) Those in which membrane was present on the pharynx and larynx. (3) Those in which membrane was present on the larynx only. (4) Those in which membrane was present on the pharynx and in the nose. (5) Those in which membrane was present on the pharynx and larynx and in the nose. The mortality in the different groups was compared. The cases were also arranged in two series: one in which the whole of the antitoxin administered was injected within the first forty-eight hours of treatment, and one in which the injection of antitoxin was continued over an extended period. Of the cases which presented symptoms more or less severe of laryngeal affection, nearly one-half escaped the operation of tracheotomy, a very much larger proportion than is usually the case in laryngeal diphtheria treated in other ways. The tracheotomies performed may be divided into two groups:—(*a*) Tracheotomy within twenty-four hours of the first injection; (*b*) tracheotomy at a later period. Only two cases out of seventy-five belong to group B. The Committee desires to draw special attention to these facts, and also to the results of the operation of tracheotomy in which the mortality amounted to 36·0 per cent. as opposed to 71·6 per cent. in the central series compiled from the records of the general hospitals before the introduction of antitoxin.

The effect of age on the mortality in the antitoxin series is similar to that found under other kinds of treatment. The mortality falls as age increases, but it is in the first five years of life that the lessened mortality in the antitoxin series was most marked. It is to the lesser frequency with which membrane extends to the larynx and trachea in cases treated by antitoxin

and to the effect of the antitoxin on them when membrane is present that the lessened mortality in the antitoxin series is mainly due. The total mortality in the 633 cases amounted to 124 or 19·5 per cent., as opposed to 29·6 per cent. in the non-antitoxin control series. Not only is the mortality in the antitoxin series much less than in the other, but the duration of life in the fatal cases is longer, a fact which has considerable bearing on the frequency with which paralytic symptoms occurred. The closest investigation has failed to discover any connection between the occurrence of paralysis and the amount of antitoxin injected, nor did the period of the disease at which it was first used appear to exert any influence on the occurrence of paralytic symptoms.

Some form or other of rash followed the injection of antitoxic serum in very nearly a third of the cases. The rashes can be divided into two main types—those which were of an erythematous and those of an urticarial character, the former largely predominating. The rashes appeared at very variable times after the first injection; two-thirds were first noticed between the sixth and twelfth days after the first injection, and the eighth day was the one on which the rash most frequently appeared. The rashes also varied greatly in duration, and were accompanied by a rise of temperature in rather more than half the cases. Neither age, the amount of antitoxin administered, nor the period of the disease at which it was used appear to have any influence on the occurrence of the rash. In no instance did the presence of a rash appear to have any bearing on the ultimate result of the case. Joint-pains, which are not met with in the non-antitoxin series, and are apparently due to the antitoxic serum, were observed in a small number of cases. Nearly all of these had also a rash, and some had accompanying fever. In a few instances rise of temperature, without the presence of either joint-pains or rash, occurred during convalescence. The percentage of deaths, with suppression of urine, was found to be practically the same in the antitoxin as in the non-antitoxin series. The general result of the inquiry shows that in the cases treated with antitoxin not only is the mortality notably lessened, but the duration of life is also prolonged. The injection of antitoxin produces rashes, joint-pains, and fever, but with these exceptions no prejudicial action has been observed in this series of cases investigated to follow, even in cases in which a very large amount of antitoxic serum has been used.

Note.—The Committee has added in an appendix the accounts of three cases communicated to them quite recently in which other symptoms were observed to follow the injection of antitoxic serum.—*From the Report presented by Dr. Church, Medical Press and Circular, June* 8, 1898.

7.—SERUM TREATMENT OF DIPHTHERIA.

By Prof. Obermayer, M.D.,
Director of "Franz Josef Spitale," Vienna.

Obermayer expressed great surprise at the scepticism displayed by Prof. Kassowitz. He had occupied his present position for three years only, but during that time he had treated 4,500 cases of infectious disease, 1,200 of which were suffering from diphtheria.

The numbers received into hospital were:—

	1893 ..	414	
	1894 ..	494	
	1895 ..	372	417 were treated with serum at end of this year, 1895.
	1896 ..	335	
	1897 ..	329	
Five months	1898 ..	137	
		801	
And 801 + 417 =		1,218	Total number treated since serum was introduced.

Or 1,218 of these were treated with serum. This table also shows that the admissions were not greater after than before the serum epoch. Let us analyse the numbers still further into quarters, leaving out the first quarter in 1893:—

			Mortality per cent. per qr.		
No Serum.	1893 ..	368	48·8	Minimum mortality per cent. = 32·9.	Maximum mortality per cent. 4·88.
			32·9		
			55·9		
	1894 ..	494	43·9		
			45·0		
			39·2		
			35·7		
Serum Treated.	1895 ..	417	21·2	Minimum mortality per cent. = 7·2.	Maximum mortality per cent. 31·8.
			19·5		
			19·7		
			18·6		
	1896 ..	335	22·7		
			14·1		
			7·2		
			12·7		
	1897 ..	329	29·7		
			31·1		
			13·2		
			26·2		

In this table 162 of the patients were over 15 years of age = 13·7 per cent. It also shows a mortality minimum and maximum percentage before serum to have been 33 and 49 respectively, while it is only 7·2 and 31·8 after the introduction of the treatment. The greatest reduction is seen immediately after the treatment was commenced.

There is no probability of the material having altered during these periods as the hospital is situated in the poorest neighbourhood of the city, where the most poverty-stricken of the inhabitants are likely to be received. Nothing but the new method of treatment can account for this reduction in the death-rate. The children now received are for the most part thin, weakly, emaciated creatures, often in a moribund condition when admitted, a fact which amply proves the unvarying character of the material admitted to hospitals. A glance at the death-rate from measles (24 per cent.) tends to confirm this assertion if confirmation were necessary. In such neighbourhoods the children's condition does not attract attention until the grave symptoms have appeared, as the parents are far too busy and allow matters to take their course till dangerous symptoms frighten them into action. Owing to this circumstance no exact date of the invasion can be obtained in carrying out the serum treatment in accordance with Behring's treatment. This important factor of invasion was acknowledged as far back as Trousseau, who admonished his students: "Forget not, gentlemen, that a very large number of cases of diphtheria are innocent or apparently simple at the beginning. The fever may appear in the first twenty-four hours or second day, but soon disappears or is very slight. The disease is hardly ever ushered in by the throat symptoms which appear later on, affecting the breathing by spreading from the pharynx into the larynx, this process culminating in death." This quotation is as true to-day as it was years ago. All will acknowledge the difficulty, if not the impossibility, of distinguishing a simple case from a grave case on the onset of the disease.

Kassowitz laid much stress on slight cases being treated as severe ones. From my own experience I can conscientiously repudiate any such suggestion since commencing the serum treatment. As to the local objection being evidence of recurrence, this we can hardly deny. In many of my own cases the shedding of the exudation took place during the night and was replaced in the morning by a grey layer covering the mucous membrane resembling a recurrence. It had all the appearance of a thick, shaggy membrane filled with persistent cocci, and I believe many of the recurrent cases are due to this persistent membrane.

In my own 1,200 cases 350 were croupous, which left 850. With the exception of one individual case, which became red and injected on the fourth day and subsequently assumed the gangrenous form of diphtheria, none showed any tendency to spread from the pharynx to the larynx. When we consider the frequency of this condition in epidemics, and the tendency to spread to the larynx, we must admit the potency of the serum

when only one can be produced out of 850 cases. This fact is further confirmed by the history of the croupous cases, which do not amount to a fifth of the total; and by the circumstance that in certain epidemics there is a marked tendency to descend which has occurred only once during the history of serum treatment, which must be credited with some share in the abatement. The successful result of the serum treatment is clearly defined in the croupous cases also:—

	Cases received.	Died.	Mortality percentage.
1893	119	98	82·3
1894	185	143	77·3
1895	103	31	30·0
1896	120	32	26·7
1897	130	63	48·5

I may also state that the results from immunisation have also been a success in the institution, where 500 patients have been thus treated—250 within the last year and a half. In a large infectious institution doubtful cases frequently arrive and are not properly isolated till irreparable damage is done. A case of measles with diphtheria may be easily overlooked, and nothing short of evacuation of the ward and re-distribution of the patients will restore order and safety. In "Franz Josef's Spitale," to which I am attached, the rule is that all such cases should be immunised on reception. Since that regulation has been strictly enforced not a single case of infection has been recorded.

Kassowitz has advanced the late changes in the kidneys and nervous system as convincing proof of the impotency of the serum treatment in diphtheria. Now, this objection appears to me to be groundless when we compare the sequelæ in other conditions of an analogous nature: for example, phosphorus poisoning.

The points I have endeavoured to place against Kassowitz's attack on the diphtheria antitoxin are briefly these:—(1) The absolute number of cases received into my own clinic since the inauguration of the serum treatment is less than before that epoch. (2) The morbid material and quality has the same proportion, in the matter of severe cases, since the commencement of serumtherapy as before its introduction. (3) Statistics prove that the present mortality maximum is not so great as the former minimum mortality from diphtheria. (4) The transformation of a mild case into a severe case has on no occasion been observed under the serum treatment. (5) Timely administration of serum will prevent the false membrane spreading from the pharynx to the larynx. (6) My own experience of immunisation confirms the favourable opinion of serum. (7) Post-mortem changes cannot be advanced as

sufficient proof against the efficacy of serum.—*Taken from the report of Vienna Clinical Lectures in the Medical Press and Circular, August* 31, 1898.

8.—INFLUENZA.

By H. Pollen, M.D., Wellington, N.Z.

[The following is taken from Dr. Pollen's paper:]

The suddenness of the invasion has always been a marked feature in influenza epidemics. There are scores of interesting points connected with the suddenness of the invasion and spread of influenza. The one, I think, which strikes most people is the difficulty of explaining the simultaneous outbreak of epidemics in widely distant countries, and in ships and steamers far away from land. With regard to the epidemic here last December, I must say at once that there was nothing very unusual about it. For the third or fourth epidemic since 1890 it was pretty severe, epidemics of influenza having, it is stated, a tendency to get milder and milder until taking their long holiday. It certainly came on very suddenly; whole households were laid up simultaneously, no one being left well enough to light the fire in two large families I attended. It was very general, having, as usual, a preference for those previously attacked, but with many exceptions in this particular in my practice, suggesting exhaustion of soil at last, much to the delight of the former sufferers. Our December epidemic was sudden, sharp, and general; but what I noticed most was the large number of cases presenting nervous symptoms alone. In the English epidemic of 1890 it was observed, towards its latter part, that the catarrhal form of influenza, which represents the popular conception of the disease, was often altogether absent, and that intense depression—amounting in some cases to extreme melancholia, followed by suicide—and complete exhaustion were the only symptoms present. Dr. Althaus calculates that more than half the cases in that epidemic were of what is called "the nervous form" of the disease. In our late epidemic Dr. James had two cases, in male adults, which were ushered in with violent delirium, but without any fever and with slow pulse. These cases were interesting, and suggest a question of the frequency of apyretic influenza—influenza with all the typical symptoms but no fever. There seems to be a good deal of evidence that this condition is not uncommon, for a number of cases have been reported of severe influenza with a subnormal temperature all through. There is one thing about the fever in influenza which I think is not open to much doubt, and that is, that there is no parallelism between the degree of fever and the severity of the illness as is the case in the

eruptive fevers and other acute diseases. A high fever at the onset does not imply a coming severe attack, for the most alarming symptoms have occurred in cases where the temperature has hardly risen at all, remaining at from 99° to 100° all through. Even the onset of pneumonia is not always marked in influenza by a sudden rise of temperature. In nearly all the cases I saw during last summer there was the typical suddenness of onset of the disease, the "dead felled" condition which so many writers have ably described. There can be no doubt that the nervous phenomena of influenza are the most bewildering as well as the most interesting features of the disease. In the recent epidemic I noticed several cases in the early stage of alarming drowsiness, a symptom which evidently did not escape the notice of older writers, as one of the old synonyms of influenza was "the sleepy sickness." Far more common, however, is the opposite symptom of excessive sleeplessness, owing to the racking pains in the head which drugs, even in heroic doses, sometimes fail to subdue. Of the other nervous symptoms I noticed last December there was nothing unusual. The ordinary intense initial headache, extreme depression, and the various forms of neuralgias were well in evidence in most cases. Of the neuralgias, the most common in my practice was, I think, the intercostal form—a form which often suggests more serious lesions by the respiratory disturbance it causes. As a result of influenzal toxin, a good many cases of localised and even multiple neuritis have been published. Gowers says influenzal neuritis attacks the face only in most cases, and that the disturbance of sensation is slight. Dr. Westphal relates a case on the sixth day of influenza of weakness of the limbs, followed rapidly by complete loss of power in all the limbs and both sides of the face, with only slight disturbance of sensation. There was in this case the peculiar œdema of the extremities met with in multiple neuritis, but complete recovery in six weeks. Amongst the other phenomena I noticed in December was one of excessive giddiness coming on as an early symptom and lasting for two months after; the patient was otherwise convalescent. I saw one case of herpes zoster coming on early in the disease, and two cases during the tardy convalescence of severe attacks. I had one case of long-continued sub-normal temperature with great debility, but, strange to say, a most extraordinary appetite and tolerance for alcohol in a patient previously a small eater and almost total abstainer.

I will now consider for a moment the other varieties of influenza—the catarrhal and gastric group; but, before doing so, I would like to say this division is perfectly arbitrary, as there are no true pathological characters to distinguish them, a blending of all the characters being the rule. Under the

heading of catarrhal symptoms, I may say that pneumonia was fairly prevalent during the late illness here. It was of the usual "influenzal variety," asthenic in type, insidious and slow in its development, rarely ushered in by rigor, cough slight, and characteristic sputum often wanting, and dulness not marked, the crepitant râles alone telling the tale. I saw, however, a few cases of typical, well-marked pneumonia, but these were post-influenzal. A great deal seems to have been written on the eccentric character of the pneumonia of influenza, but time does not permit me to refer to it. Pneumonia seems to have been very prevalent and fatal in the English epidemic. In spite of the classification of influenza there can, I think, be little doubt that in nearly all cases you have more or less gastro-intestinal disturbance. I have, however, seen some cases in which the digestive organs seemed to have escaped the morbid influence, that is, while the patient was extremely ill, horribly depressed, and in great pain, the tongue remained clean, the appetite was not lost, and bowels were normal; but these were rare, though Dr. Althaus says they occur in 30 per cent. of the cases. On the other hand, in our recent visitation there were cases where the toxin seemed to expend all its virulence on the gastro-intestinal tract, as evidenced by excessive vomiting, abdominal pain, and alarming diarrhœa. The mortality here in December and January was small—a few feeble children succumbed from chest complications and several middle-aged and elderly people from pneumonia, bronchitis, heart failure, and kidney trouble. In Dr. Rawson's practice there were two deaths from meningitis. Symptoms came on early during an attack of influenza in healthy young adults, and terminated fatally before the end of the second week.

As to the diagnosis of influenza, the suddenness of the onset, early prostration, the characteristic tongue—flabby and large, with a thick coating of creamy, dirty, white fur—little accelerated pulse, and indefinite type of pyrexia, all help, if other symptoms fit in, to distinguish influenza from typhoid, a disease for which it is most frequently mistaken, the difficulty of differential diagnosis being increased when the spleen is enlarged, as it is sometimes in influenza. A good many cases were admitted into the Wellington Hospital diagnosed as typhoid which turned out to be simply influenzal in type; but, of course, it is possible for patients to have typhoid following influenza. Influenza occurring, as it frequently does, during the puerperium, may readily be mistaken for sapræmia or acute sepsis and an unfavourable prognosis given. One diagnostic symptom of influenza, though not always available in the early stage, is the well-known loss of taste and smell. This, I believe, is peculiar to influenza.

As to the treatment of influenza, there is no known specific. There are scores of remedies, infallible and otherwise, recommended, but the disease runs its course in spite of them all. That early to bed is early to rise is even more true of influenza than it is of typhoid I am quite convinced. Rest in bed until undoubted convalescence commences is, to my mind, the main factor in the treatment of influenza. Some preparation of opium for the pain and restlessness and an ordinary diaphoretic mixture are the only medicines I use in the uncomplicated early stages. The salicylates I have been sadly disappointed with. They, I think, undoubtedly increase the depression without any corresponding benefit. Quinine, no doubt, in the later stages, when neuralgias are present, does good; but I think its use as a routine remedy is a mistake. The popular remedy in Wellington in the summer was whisky and quinine. From the effects of an overdose of this mixture, which was generally dispensed in the hotels, I saw several serious symptoms. The whisky and quinine, plus the influenza toxin, produced a condition very much allied to delirium tremens. That whisky in full doses temporarily reduced the intense headache I had some evidence, but also undoubted evidence that the last stage of the partaker of that agreeable medicine was worse than the first. So that I now say with the emphasis of experience don't give alcohol in the early stages of influenza. Medical men, too, I am sorry to say, and especially our friends the surgeons, are inclined to treat influenza lightly as a mild disease. Nothing could be more fallacious. Even if the mortality table and the recorded cases of permanent ill-health after attacks do not impress, surely a disease which can number amongst its sequelæ such a list as the following must at least claim our respect. The recorded sequelæ of influenza include cases of mania, melancholia, general paralysis, meningitis, neuralgias of various kinds, neuritis, optic neuritis (followed by optic atrophy and amaurosis), other various ocular troubles, middle-ear disease, laryngeal affection, diabetes, phthisis, pneumonia in every form, bronchitis, pleurisy, empyema, abscess in the lung, ulcerative endocarditis, myxœdema, acute pemphigus nephritis and orchitis, and many others.—*Australasian Medical Gazette, July* 20, 1898.

9.—ON ROETHELN.

By Leonard G. Guthrie, M.D., M.R.C.P.

[The following is taken from the author's remarks on the rash:]

Accounts appear to be somewhat conflicting, yet in the main they coincide in making clear the fact that in so-called roetheln

the eruption is chiefly like that of measles, though at some period it may bear a close resemblance to that of scarlatina. The distinctions drawn between the roetheln and the measles rash are that in the former (1) the papules appear more quickly and subside sooner than in measles, (2) they are not arranged in crescentic groups as in measles, (3) they differ in colour from those of measles. These distinctions would carry more weight were it the fact that the rash of measles always presented the same appearance and went through the same course. But everyone must be familiar with cases of undoubted measles in which the rash differs in far more particulars from the normal type and course of a measles rash than do cases of so-called roetheln. I need only refer to Dr. Hood's paper for numerous instances in point. A day's difference between the invasion of the disease and the appearance of the eruption in measles and roetheln respectively is not of great importance, as Dr. Cheadle himself appears to admit.

The crescentic outline of the groups of papules in measles seldom approaches geometrical accuracy. In many cases it merely amounts to irregularity of the edges of papular groups, although, when rounded groups coalesce, the outline of the patch must be more or less rounded or crescentic. The cloud is very like a whale or a crescent, according to the bias of the observer. Clement Dukes speaks of the groups of coalesced papules in roetheln being arranged in "patches of bat's-wing pattern." The outline of a bat's wing is surely crescentic. The only reason why the crescentic outline is absent on the forehead in roetheln is that the papules are sparse in this situation, and disappear before they coalesce. The papular eruption described as that of roetheln seems to have little to distinguish it from that of measles. But greater difficulties arise as regards the scarlatiniform rash.

Is the eruption really "indistinguishable from that of scarlatina" as so many observers have stated? If so, it would be almost impossible to avoid the conclusion that scarlatina, and not roetheln, is present. But as both Squire and Dukes have pointed out, the rash, when confluent, although bearing a superficial resemblance to that of scarlatina, differs from it in being more raised and prominent, and less finely diffused, than in scarlet fever. The present writer's experience is in confirmation of this distinction, and he would add that the edges of the confluent eruption in cases of so-called roetheln are much more abrupt and well defined than in the case of scarlatina. On close inspection the confluent eruption is seen not to be punctate or composed of myriads of specks of colour as in scarlatina, but to consist of closely-set, raised, and palpable papules, in some cases suggestive of "giant urticaria." This resemblance may account

for the statement of Trousseau, Vogel, and others, that the rash itches. There is, however, often a widely-diffused blush or flush on the face, neck, chest, and other parts of the trunk, uniform and not raised, which may suggest the appearance of scarlet fever. But this, again, is neither punctate nor papular. It is a flush, and not a rash. The varied descriptions of the colour of the rash seem unimportant. The colour of a rash must largely depend on the patient's complexion. In blondes with white, thin, and delicate skin, a scarlatinal rash is mostly scarlet, but may be rosy. Some blush red, and some blush pink. In blondes with ivory-yellow skin the rash has usually an orange-red appearance, whilst in brunettes it presents a dusky crimson, or it may be purplish, hue. Finally, in persons whose skin is naturally rough and coarse a confluent rash may appear papular without actually being so. It is the skin which is papular, not the rash. Hence there is danger of regarding a scarlatinal rash as the confluent papular eruption of roetheln. But the papules formed by prominent hair follicles and choked glands are less rounded, smaller, and more palpable than the papules of roetheln and measles. In cases—and there are many—in which the eruption seems indistinguishable from the scarlatinal, some help may be gained from the presence of outlying papules of measly appearance in the neighbourhood of the area of confluence, or from a history of their having been seen on the face and elsewhere. In some cases, according to Dr. Donald Hood, their appearance is delayed until after the appearance of the confluent rash. Watson, however, long ago pointed out that in scarlatina the rash on the forearms, legs, backs of hands, and feet, consists of larger and more prominent papules than elsewhere. I believe that if the points of distinction—namely, the difference between a papular or punctate eruption and a blush or flush—already enumerated be borne in mind, the danger of mistaking scarlet fever rash for roetheln may usually be overcome. In cases where the rash is actually indistinguishable from that of scarlet fever it is safest, and probably most correct, to conclude that scarlet fever is the disease with which we have to deal.

Dr. Guthrie's general conclusions run as follows:—(1) The clinical course of roetheln is not incompatible with the view that it is an anomalous form of measles occurring towards the end of an epidemic of that disorder. (2) The rash can, as a rule, be distinguished from that of scarlatina. When it is indistinguishable, the disease is probably scarlatina, and should be regarded as such. (3) The rule that immunity is afforded by one attack of an exanthem against another admits of so many exceptions that it cannot be used as an argument in favour of the specificity of roetheln.—*Treatment, September* 8, 1898.

10.—THE TREATMENT OF SMALLPOX: PALLIATIVE AND PROPHYLACTIC.

By John Moir, L.R.C.P. Ed., Leytonstone.

[The following is taken from Dr. Moir's article :]

For fourteen years ending in 1894, as medical superintendent of two smallpox hospitals, I have had about 4,000 cases under observation and treatment, with an average mortality of 11 per cent. Of course there are many degrees of severity in the different varieties of the disease. In the simple or discrete variety, no treatment is practically required, whilst in the completely hemorrhagic variety no treatment is of any avail ; but the semi-confluent, confluent, and semi-hemorrhagic forms are amenable to treatment of the most persevering kind. The complications and sequelæ—especially threatened blindness, laryngitis, pneumonia, abscesses, bedsores, &c.—require the most active treatment. Sydenham was the first to insist on the benefit of lofty and spacious, thoroughly well-ventilated accommodation, with perfect cleanliness.

In the early stages of smallpox the palliative remedies required and of most use in treatment are sudorifics—Dover's powder, liq. ammon. acet., and the like—with an aperient, black draught in preference, as acting on the whole line of the intestinal canal. Soups, beef-tea, milk, and cooling drinks (citric acid diluted and flavoured with sugar and orange, or lemon syrup) and oxalic acid used in a similar manner. With respect to the oxalic acid drink as a refrigerant—recommended with the formula for making it in Scoresby Jackson's "Materia Medica"—my patients, even at the worst, when their eyes were closed from the swelling of the lids, used to ask for the "cooling" drink, as they found that it relieved the thirst better than anything except ice. I have incidentally mentioned ice, which is invaluable in milk, cooling drinks, water, or by itself. Then oranges and ripe fruit (especially apples), mineral waters, tea, cocoa, &c., with milk puddings, eggs, roast mutton, fowls, and so on, up to full diet.

There is no good to be obtained by puncturing ripe pustules, or using masks of collodion and castor-oil, iodine diluted, or nitrate of silver, or anything of that kind ; but it is much better, and always gives better results, to allow as much freedom from tension of the skin in exposed parts as possible, by using freely and lavishly, and very frequently, the best olive-oil, vaseline, or Sanitas ointment, the last being particularly grateful to the patient, and the odour by no means unpleasant. This requires great patience and perseverance on the part of the nurse, as well as the daily attention to the head, and particularly

the hair; indeed, in this respect, one cannot be too careful, as, with even the very greatest care, cleanliness cannot after all be entirely or absolutely ensured. With regard to the eyes, and the danger of blindness from pustules forming, and from ulcers, as well as inflammation, photophobia, and the like, frequent bathing, sponging, and syringing is necessary; and sometimes the extract of belladonna made into a paste, and applied on the inner eyelids with a camel's-hair brush, will prevent the loss of sight; and occasionally perhaps the application of a solution of nitrate of silver. But no hard-and-fast line can be laid down for such cases as these; each must be treated as it arises, and for each must be used the appropriate remedy. Even then, unfortunately, a small percentage barely escape with life, but lose the sight of one, and less often of both eyes. For sleep, Dover's powder, tr. op. c̄ glycerine, or, more often, chlorodyne and glycerine are useful; sometimes hyosc. or cannab. ind. are useful in a sleeping mixture; the hyoscyamus being preferable for children, with sweet spirits of nitre and syrup of squills. All abscesses ought to be opened, and linseed meal and charcoal poultices applied, particularly to bedsores; then benzoated zinc ointment, thickly spread on medicated lint, and frequently changed. Empl. roborans strappings (1-in. in breadth), applied not too tightly, and changed daily, frequently facilitate the healing of tedious abscess or ulceration sores, after the cleansing and healing process has once made a start. I have had no recoveries from hemorrhagic smallpox, but in semi-hemorrhagic—that is, eyes bloodshot, bleeding from bowels, and a few purpuric spots here and there about the body—cases have recovered, with the treatment internally by tr. fer. perchlor. c̄ ac. sulph. dil. et liq. chlorof. In laryngitis, a common and dangerous complication, the most useful remedies were found to be steel and quinine, chlorate of potash and glycerine, syr. limon. vel syr. aurant. c̄ ac. citric et syr. simpl., internally; and the local application of liq. fer. perchlor. and glycerine in equal parts, with small pieces of ice given, to be sucked away in the mouth, and a warm linseed meal poultice applied in a flannel to the throat externally. In pneumonia and bronchitis and other complications, the remedies used were simply those for the maladies occurring in uncomplicated states, and were usually successful, though one or two deaths occurred from pneumonia, as doubtless they might have done under ordinary circumstances.

In convalescence, daily warm baths, as soon as the patient was strong enough and the pustules began to scab, were resorted to; but sometimes, in mild cases, baths were used from the first, patients not confined to bed, nor compelled to remain indoors, if able to go out safely into the grounds; in fact, there

was no routine treatment, and I do not think there ought to be; every case should be treated or not treated according to its necessities. After the first bath, in severe cases, usually more solid food was allowed—mutton, fish, beef (boiled, stewed, or roast), with light pudding and fruit. It was not at any time found either useful or necessary to give any wine, beer, or spirits, although there was no restriction, and they would have been used if required. All abscesses were opened, dressed, and kept clean, and such patients were, for hygienic purposes, allowed to sit out, when able, in the open air, talk, sing, read a little, or walk about just as they pleased. They went to bed at nine in summer, eight in winter, but could go and lie down in or on their beds at any time in the day and for any length of time. Friends were allowed to send in messages at the gate three times a week; also fruit, jelly, jam, or sweets, at the discretion of the matron, nurse in charge, or doctor.—*Edinburgh Medical Journal, June*, 1898.

11.—PLAGUE PRECAUTIONS.

By Nield Cook, Ph.D., Health Officer, Calcutta.

[The following is taken from Mr. Cook's interesting remarks on the difficult subject of dealing with plague in India:]

The conclusion I draw is that the system of notification, isolation, and disinfection has proved, and is bound to prove, a failure in dealing with an epidemic of plague in a city, and that we must look for some other measure which will at least give some prospect of success. The only one that appears to me in any way feasible is to deal with plague as we deal with small-pox, by sending our vaccinators to the spot to vaccinate as many of the people living there or thereabouts as can be induced to submit to the operation. In Haffkine's prophylactic we have a vaccine against plague of proved efficacy, which, as at present inoculated, reduces the mortality between 80 and 90 per cent. There is, moreover, considerable evidence to show that the protection afforded lasts through at least one outbreak and probably longer. I am convinced that this offers much better prospects of controlling an epidemic of plague than any other measure that has been suggested. The only question in my mind is as to the best means of carrying it out. If Government were to order all people exposed to infection to be inoculated they would have a grievance and would probably resist it. There might even be serious trouble. But the people would do almost anything to get out of the obnoxious removal from their houses, and to do this would probably submit to

inoculation very readily, even at the commencement, and still more so when they realised that the inoculated in most cases escaped infection. I would suggest making the old classical measures of isolation and segregation as stringent as possible on paper, and, at the same time, letting it be known that they would not be enforced in a house in which not less than half the inmates submitted to inoculation. I believe that this could be done with a minimum of friction, and that most people could further be persuaded to allow their poor relations and dependents to be taken to hospitals if stricken with plague, and that to insist on the master of the house or his wife being removed would only lead to the concealment of cases. It is above all things important to have the people on our side and not working against us, and if these measures were carried out with tact and consideration, I believe the people would appreciate them and probably assist us, or at least offer a minimum of opposition. The efficacy of the prophylactic is so apparent that it is by no means improbable that it would soon be recognised by a considerable proportion of the people, who would voluntarily come forward to be inoculated for their own protection. Money must be freely expended in dealing with an epidemic of plague. In Bombay something like Rs.2,500,000 has been spent in dealing with 25,000 cases, or Rs.100 a case. I think a certain amount would be well laid out in giving a small dole for a couple of days to poor persons who submitted to inoculation, say, As.4 a day for the two days, for each bread-winner of an inoculated family. We should, of course, be largely dependent on the assistance of enlightened native gentlemen in carrying this out. There would be no difficulty about getting a sufficient supply of the prophylactic from Bombay. I have enough to inoculate 1,000 persons to start with.

In the remarks that I have made I have dealt with the treatment of an epidemic of plague in a city, and I have expressed my belief that the measures generally adopted have proved and are bound to prove a failure. But in dealing with imported cases I have full belief in their efficacy, and have myself carried them out with a successful result which might or might not be due to the efficiency of measures. The history of an outbreak in any quarter is generally that one or two imported cases occur, then there is an interval, then two or three sporadic indigenous cases occur, after which the epidemic breaks out in full force. If the imported cases are detected and removed, without rats or any other infective agency getting infected, all will be well for the time at any rate. But our means of getting information of these cases is very imperfect and cannot be depended on. The proposal to insist on medical

certificates of the cause of death, with examination of corpses in default, was not approved by the Plague Commission, so we are solely dependent on our system of observation of all persons from infected areas about which I have made suggestions in a separate note. When the two or three indigenous cases occur, the possibility of stamping out the disease by repressive measures is perhaps sufficient to warrant us in adopting them, though it is not likely that they will be effective, as the microbe has been reproducing and gathering strength somewhere and somehow during the time that has elapsed from the appearance of the imported cases, and the indigenous cases are the first signs of the storm rather than the sole vehicles of the infection. After that I believe that these measures are calculated to do more harm than good by setting the people against the Executive and leading to the concealment of cases. The whole secret of success, however, in dealing with imported cases and preventing an epidemic consists in having everything ready and a sufficient machinery in good working order before they appear. For this I am of opinion that we should have, say, a dozen small hospital sheds capable of accommodating four or five patients, each fully equipped and in charge of a hospital assistant in as central a place as possible, so that on the occurrence of a case it can be sent there at once; and there need be no mixture of castes to irritate the relatives, who would have some provision made for them in the enclosure, the remainder of the contacts being taken to a segregation camp or health camp capable of holding at least 500 persons. Such of these persons as submitted to inoculation might be permitted to go to their work or to return to their houses, if they insisted on it, after a couple of days, which would give sufficient time to thoroughly disinfect the premises. Any damage done to the house in letting in light and air and disinfecting it should, I think, be compensated immediately in the case of the poor, the officer in charge of the proceedings giving them a slip to be presented for payment at the Municipal Offices.—*The Indian Lancet, May* 16, 1898.

12.—A SIMPLE AND RAPID METHOD OF DETECTING TUBERCLE BACILLI IN FLUIDS.

By E. W. Hammond,
From the Molson Pathological Laboratory, McGill University.

Anyone who has attempted to detect tubercle bacilli in fluids knows how wearisome and uncertain are the ordinary methods. Numerous suggestions have been made with regard to the

shortening of the process of detection; some workers have employed caustic potash to dissolve out mucous and proteid materials, and have obtained fair results by decanting. Others again have employed the centrifugal machines and the hæmatocrit. In neither case do the results obtained appear to be so certain and the process so satisfactory as that here given. Some authorities have used very complicated methods. Ilkavitch coagulates 20 ccm. of milk by dilute citric acid and dissolves the coagulum by phosphate of soda (saturated aqueous solution); then sulphuric ether and water are added, the mixture is shaken for fifteen minutes, the solution is allowed to stand, and after the fat has separated the remainder of the liquid is taken, and dilute acetic acid is added until the first sign of coagulation appears. It is then transferred to the centrifugal machine giving 3,600 revolutions per minute, and the deposit is conveyed to two slides and examined with oil immersion.

However, as a result of a series of studies in which, at the suggestion of Dr. Adami, I tried various methods of separating the bacilli and gaining them from milk, I have eventually discarded one after another of the solvents of the various constituents of the milk, and have devised a method which appears to be at the same time accurate, cleanly, and fairly rapid. The method is briefly as follows:—Taking milk to which preferably, in order to arrest the growth of other bacteria (which are apt to hide the tubercle bacilli), 5 per cent. of glacial carbolic acid has been added, I take 30 cc. 15 cc. in two tubes, and centrifugalise in Purdy's electrical centrifuge, or even preferably in the hand centrifuge of Bausch and Lomb or Queen, for the latter appears to give easily more rapid revolutions per minute. After centrifugalising for about fifteen minutes, the supernatant fluid is poured off; the precipitated debris, which contains the bacilli, is then treated while in the tube with about 3 cc. of a 5 per cent. caustic potash solution, is mixed up thoroughly by giving a good shake, and is left for two or three minutes. The tube is then filled up to the 15 cc. mark with distilled water, and centrifugalised for about twenty minutes. If now the supernatant fluid be taken off, the minute quantity of the debris at the base of the tube can be examined at once, or if the material be required in a still purer condition, completely free from caustic potash, a series of dilutions and centrifugalisations with distilled water can be carried on. By this method a film can be made upon a slide or coverslip which is free from fat and proteid granules, and which contains only the bacteria present, together with any solid debris which may be in the milk or other fluid. To get rid of this foreign matter, if present in any large amount, one may safely filter the fluid at the beginning of the process through the finest gauze. It is wholly unnecessary,

I find, to treat milk with sulphuric ether in order to separate off fats, the caustic potash being useful to remove both fats and proteids from the deposit after the first centrifugalisation in a way that is completely satisfactory. I have employed this method, and have been able to detect bacilli in the milk in which they were present in such small numbers that Dr. Martin, inoculating 15 to 35 cc. of the same milk into a series of over fifty guinea-pigs and rabbits, has only once obtained a development of tuberculosis, and I will go so far as to say that this fact indicates that the method affords a more sure diagnosis of the presence of bacilli in milk than does inoculation. It may be added that using this same milk I have concentrated down 70 cc. using distilled water alone, and have inoculated the deposit into a rabbit which now, after fourteen days, is showing definite emaciation and indications of the progress of tuberculosis. It is scarcely necessary to add that this same simple method can be most satisfactorily employed for the detection of tubercle bacilli in other animal fluids; it gives excellent results, for example, with sputum from suspected cases of tuberculosis, and although as yet I have had no undoubted example of tuberculous urine, I have found that it gives a very clear precipitate of bacteria in urines containing a large amount of mucus and pus.—*Montreal Medical Journal, July*, 1898.

13.—THE CRUSADE AGAINST TUBERCULOSIS.

By Arthur Ransome, M.D., F.R.S.,
Late Professor of Public Health, The Owens College; Consulting Physician to the Manchester Hospital for Consumption and Diseases of the Throat and Chest.

[The following excerpt is introduced here as this subject has recently attracted much attention:]

A national movement for the limitation, and ultimately the abolition, of tuberculosis has recently been commenced; and, judging from the support that it has received from the Royal Colleges of Physicians and Surgeons, from the most eminent members of the medical profession, and from others who rank as the highest in the land, we may fairly hope for a successful result. It will now be desirable to indicate the directions in which effort will have to be made, in order to cope effectively with this formidable malady.

(1) It is important to ascertain the full extent of the evil that has to be dealt with; and, to this end, a complete census of all persons suffering from the malady should be made

(*a*) Notification of all classes of tubercular disease, as complete as possible, should be obtained; but, as in New York, there should be no intervention between physician and patient in any tubercular case in which the intelligent practitioner may be trusted to give the simple instructions necessary to prevent the transmission of the disease to others. All the arrangements in New York for recording both cases and deaths, and the action taken in order to prevent infection, will probably have to be closely followed in our own campaign against the disease. (*b*) Similar returns as to the proportion of cattle affected by tubercular disease should be obtained. All herds of cattle will have to be thoroughly inspected, and tested by tuberculin, in order that we may know the exact degree of danger from this possible source of infection.

(2) Measures for the prevention of infection will have to be undertaken. (*a*) Instructions as to the best means of destroying the sputum, and other discharges from tuberculous patients, will have to be widely circulated. Here again we shall have valuable assistance in the admirable leaflet on the subject, issued by the New York authorities. (*b*) All the cases of tuberculosis reported to the authorities by their medical attendants as being in need of such help, will have to be visited in their homes by medical inspectors detailed for the purpose. They will both give verbal directions, and will decide upon the best course to be taken in each case. (*c*) If the case is one which, in the judgment of the inspector, requires special hospital treatment, the fact must be reported to the authority, and the patient will have to be visited, as in New York, by a special inspector, who will determine, by physical and bacteriological examination, the tubercular nature of the case. He will also have to decide whether the patient is in circumstances which prevent him from receiving proper care or medical attendance, or whether he is a source of danger to others. Under such circumstances he will endeavour to have him removed to some special hospital, and will take measures to have his house properly disinfected. (*d*) The provision of suitable hospitals will have to be another very important aim of the League. At the present time, with the exception of a few hospitals for consumption in London, and still fewer in other parts of the kingdom, the workhouse hospitals are the only refuges to which these poor patients can be sent. At the inaugural meeting of the society it was mentioned that one of its objects would be the establishment of suitable "open-air sanatoria" in different parts of the kingdom. (*e*) The disinfection of infected houses, whether before or after the death of the occupier, should be, as it is in Manchester, carried out at the expense of the municipality. In New York the process

is called "renovation," not disinfection. Dr. Biggs remarks—"This involves the application of simple and, in tenement houses, inexpensive measures, *i.e.*, scrubbing painted woodwork and floors with hot soda solution, and repainting, repapering, or rekalsomining the walls. . . . Where the consent of the owners can be obtained (and there is now but little difficulty in this), infected bedding, clothing, carpets, &c., are removed . . . to the disinfecting station, and disinfected by steam or destroyed, at the option of the owner, without expense to him" (*f*) The danger of infection from tuberculous meat or milk must be averted by thorough supervision of all herds of cattle, by the control of the sale of tuberculous meat, by the gradual formation of herds of non-tuberculous cattle, by the stringent regulation of dairies and milkshops, and by the boiling or Pasteurisation of all suspected milk.

Hitherto, as I have already pointed out, this seems to be all that has been attempted by the organizations in other countries; but, if the disease is to be effectually restrained, much more than this will have to be carried out. In spite of the best devised schemes of notification, many cases of tubercular disease will slip through the net; there will remain many centres of infection in the unsanitary tenements which exist in all large towns; and places of public assembly, such as theatres, churches, chapels, workshops, public-houses, &c., will still continue to be potent means of spreading the disease.

In addition to the other measures which have been enumerated, the British Society for the Suppression of Tuberculosis will have to promote all those measures of general sanitary reforms which have already diminished the disease by nearly two-thirds in this country, and which may be expected to effect still further improvement in this direction. I trust, also, that they will suggest special measures for the cleansing and disinfection of all places of public assembly; for the ventilation and periodical cleansing of workshops; for the prevention of overcrowding in schools; and for their better ventilation and purification.

Briefly stated, the aims of a Society for the Prevention of Tuberculosis must be:—(1) The accumulation of information as to the amount and localisation of the disease. (2) The dissemination of information amongst the general public, and especially amongst the poorer classes, with regard to the precautions to be taken to prevent its spread. (3) The enlightenment of local authorities as to their duties in regard to its prevention; especially respecting milk and meat supply, the disinfection of dwellings, and the examination of tuberculous products, free of cost to individuals. (4) The promotion of improved building bye-laws in all the chief towns in the country, and encouragement of the inhabitants to obtain more

civic "lung-space" in the shape of parks and open pleasure-grounds. (5) The establishment of "open-air" sanatoria for the poor in certain well-chosen localities.

In order to carry out these objects it will probably be necessary to ask for the co-operation of all the branches of the British Medical Association; to assist in the formation of branches of the society in all the great centres of the population; to endeavour to enlist in the service large bodies of workpeople and trade-unionists; and to appoint lecturers who would deliver simple "health-lectures" on subjects likely to improve the general health of the population.—*Medical Chronicle, September*, 1898.

14.—CHRONIC SYPHILITIC FEVER AND TUBERCULOSIS.

By E. G. Janeway, M.D., of New York.

A certain number of cases demonstrably of specific nature have come under my observation, condemned as being tubercular, not, as a rule, by physicians of little experience, but by those of well-established reputation, some being teachers and writers of medicine. Let us first pass in review the salient points of such cases, and you will bear in mind that from the nature of the subject more cannot be done. The first of this group had been sent to a noted health resort for phthisical subjects; but instead of improving had steadily lost ground, so that after three months' trial he came to me reporting a loss of forty pounds in weight, a slight continued fever, a sense of weakness, and a pain in his right side. On examination this pain was found to be dependent upon a perihepatitis which was productive of distinct friction sound, with both inspiration and expiration, and also of palpable friction fremitus. An inquiry disclosed the fact that he had been a victim of syphilis ten years before. No proof could be found of any pulmonary lesion. Under antisyphilitic treatment in two months he had regained his weight, had lost the fever and malaise, and since that time has remained well. No doubt can be entertained that in this case the liver was the site of the specific processes which had been the cause of his hectic and of his ill health. Whether it would have been possible to detect the liver implication at a very early period I cannot determine; but he had seen two of the leading diagnosticians of this country in different cities, neither of whom had made out the nature of his sickness, and by one of them he had been sent to the health resort for tuberculosis of the right lung. A second case is that of an adult

male who came to be examined because of fever, sweating at night, loss of weight, and pain in the right side. He had been ordered by a professor of medicine, who was also a noted examiner of diseases of the chest, to give up his business and remove to a resort for consumptives in consequence of tubercular disease of the right lung. A careful examination failed to reveal any distinct signs of focal pulmonary disease, but on more critical investigation two of the ribs on the right side were found to be sensitive to pressure, and a small sinus was disclosed in the neighbourhood of the middle third of the right clavicle. He admitted syphilitic infection in early manhood. Antisyphilitic treatment removed his fever, and within a month he had regained his weight. The third case relates to a patient who came to me with the history that he had been sent to a prominent health resort for consumptives because of the nexus of symptoms which have been detailed. After two months' stay there he had been sent home, because of the continuance of his fever and of his steady decline, which, in the opinion of the physician there, thoroughly informed and capable, indicated miliary tuberculosis, for which there was no hopeful outlook. This physician has been frank enough to state that he could not satisfactorily locate the disease. My own examination was negative in so far as making out the location of a process which was productive of the disturbance of his health. This led to a cross-examination of the patient in regard to his antecedents. He admitted that he had had syphilis in the past. Under antisyphilitic measures he made a rapid improvement. Then he removed to another healthy locality, where a little over a year later he suffered from a synovitis of the knee-joint. The surgeons of the place considered this to be tubercular, and advised incision. He returned to me for advice. In addition to the effusion in the joint there was some thickening of the lower end of the femur. Again, under antisyphilitic treatment, within three weeks he had made such improvement as to be practically well, and has continued so since—a period of three years. A fourth patient was referred to me for probable tubercular implication of the apices of the lungs, who had a rather marked cough in addition to the chain of symptoms outlined. Because no improvement had followed a residence in a mountain resort near his home, and because of the steady decline in his health, and of the continuance of his fever for five months, notwithstanding the use of quinine and creosote, he had been ordered to a remote mountain region. He came to me to know if I could suggest any plan of treatment by which he could avoid the necessary sacrifice of his business interests should he act upon the advice given. The physical examination of the lungs was negative; such sputum as he

could furnish did not contain bacilli or tubercle, neither did the examination of his body disclose any localisation of morbid process which could satisfactorily account for the disease. A cross-examination elicited the history of a by-gone syphilitic infection. Within three days from the commencement of anti-syphilitic treatment his fever subsided; and he wrote me from his home, after the lapse of three months, that he had regained flesh, strength, and health. His letter closed with the inquiry why his physicians had not resorted earlier to the use of a remedy which had proved so efficacious. The fifth case was that of a young child who had continued fever, wasting, and a somewhat larger liver than his age warranted. The child had been treated with the idea of malarial infection in vain. The examination of the lungs did not disclose any sufficient evidence of tubercular trouble to warrant a diagnosis of that condition. A careful questioning was made as regards the possibility of tubercular infection through milk or contact, but without proof. The child was somewhat emaciated, and the examination of the abdomen failed to prove any enlargement of the glands. This led to a careful discussion of the case with the child's physician as regards the diagnosis, which, to my mind, lay between syphilis and tuberculosis. The enlarged liver inclined me to the diagnosis of syphilis, but I was assured that there was no possibility that either parent had had that disease, from personal knowledge, and I was dissuaded from making a cross-examination. The result was that a diagnosis of probable tuberculosis was made. Later I was informed that, the child dying, an autopsy had revealed syphilitic infection of the liver, and the paternal parent had admitted a bygone syphilis. The sixth case is that of a male patient over 30, now under treatment. He had syphilis ten years ago, and consulted me because of an urticaria which had come from eating stuffed peppers. He had a very pale look, which was dependent on deficiency of hæmoglobin. The examination of the body revealed some enlargement of the liver and spleen. On inquiry, it was learned that he had lost thirty-five pounds in the past two years, had sweats at night from time to time. The result of giving him a thermometer was to disclose the fact that he had a constant temperature which varied from 100° to 101½° for the most part, but on one occasion was 102° and on another 104° F. during eight days of observation. There was more or less sweating at night. A careful examination of the lungs was made, with negative result. The blood showed neither plasmodia nor hyperleucocytosis. He was placed upon antisyphilitic treatment and five grains of quinine twice daily. Within a week he was much better. Less sweating and only very slight fever were noted. At the end of three weeks he reported that for a week

he had not had fever. His weight had increased two pounds, and the examination shows a distinct reduction in the size of the liver and of the spleen. Without administration of iron there had been, moreover, a distinct gain in his appearance, as indicative of improved hæmoglobin hold as the test by hæmoglobinometer. To these could be added one other, were it not for the fact that an eruption appeared after weeks of fever, for which residence in a hospital, change of climate, and varied medication had been tried in vain. Specific measures produced a cure. Cases likewise come under observation in which, with a history of past syphilis and a very limited area of lung implication, it can be hoped that the disease may be alone of specific nature. The most instructive case of this kind which I have followed through its course related to a man who came to me after a slight hæmoptysis. The only manifestation of pulmonary trouble was situated in the upper part of the lower lobe of the left lung. Here for a long time slight dulness, a little broncho-vesicular breathing, and a few subcrepitant râles were all that could be made out. No bacilli were found in the scanty expectoration until one year from the attack, and after he had been a resident of two health resorts. The disease spread in his case from the small beginning until the whole lower lobe was involved, a cavity formed, and the upper lobe of the same side affected. The question in such a case could be raised as to the nature of the process at its origin, and whether an original specific focus had become infected by tuberculosis. It is, however, manifest that the physical signs enumerated would, in one without a history of syphilis, have been considered sufficient to establish a diagnosis of tuberculosis, considering the existence of hæmoptysis. Moreover, in this case, no impression was made by the employment of antisyphilitic measures.

The consideration of the facts here narrated have convinced me that many physicians are not aware that fever may attend the late manifestations of syphilis, more particularly of visceral syphilis. The neurologist is sufficiently alive to the importance of always considering the possibility of syphilis being an etiological factor in the obscure diseases of the nervous system, and he very generally gives the patient the benefit of a doubt, when uncertain, and attempts a diagnosis by the use of antisyphilitic measures. Moreover, a class of cases to which I have drawn your attention do not go to a syphilologist, but to the general or consulting physician, and this paper has been presented with the view of directing attention to the necessity of considering syphilis as a possible explaining cause of those obscure phenomena which are usually only considered to import tuberculosis, malaria, or sepsis. Moreover, I do not find that in the presentation of the subject the syphilologist directs

attention specific enough to the possibility here presented. Ignorance of the fact that syphilis, in what is termed its tertiary period, may occasion a fever of long duration, malaise, emaciation, perhaps perspiration, also, without of necessity presenting such definite local manifestations, either external or internal, as can be made out on such casual examination as often occurs when a patient seeks advice at the office of a consultant on one or a few occasions, is largely the explanation of the mistakes.

In two of the cases related it was not possible to state the situation of the disease after very careful examination. We must confess that not a few physicians are inclined, with the above assemblage of symptoms, to determine that tuberculosis must exist; and, having reached that decision, enough of that normal variation of physical signs will be made out to lead to the belief that the explanation has been found in certain pulmonary changes. Moreover, it has seemed to me that physicians having a strong belief that tuberculosis existed may have had an auditory illusion or hallucination. It is far wiser and better, to my way of thinking, to hold the mind in such a condition of attention in doubtful cases as shall admit of expression of doubt, than to attempt a positive diagnosis on insufficient data. — *The American Journal of the Medical Sciences, September*, 1898.

15.—URANIUM NITRATE IN THE CONTROL OF GLYCOSURIA.

By C. Hubert Bond, D.Sc., M.D.,
Assistant Medical Officer, London County Asylum, Banstead.

[The following is taken from Dr. Bond's paper :]

As a result of Dr. Samuel West's experiments upon the internal administration of salts of uranium, we are probably most of us now familiar with the valuable auxiliary that we possess in this metal in the therapy of diabetes. At the time when Dr. West's first paper appeared, it happened that I had under my charge at Banstead Asylum a considerable number of cases with a saccharine urine—some with mere glycosuria, and others with true diabetes; and, in view of the successes recorded in that paper, and with the approval of Dr. Claye Shaw, the medical superintendent, nine of those patients were put through a course of uranium nitrate in gradually increasing doses, commencing with gr. iij twice daily, always after food, and never in less than an ounce of water. No case showed any

resulting gastric or intestinal troubles; nor was albuminuria discovered in any patient in whom it had not previously been observed, and in such cases the percentage of albumen was not found to increase. Dr. West's eight patients, *plus* one other recorded by Dr. A. Burton, are the only ones that have come under my notice in print.

It may as well be said at once that my results entirely confirm those of Dr. West; indeed, if anything, even a greater degree of success has been attained. For while, as in his series, no case proved itself entirely obdurate to the effect of uranium, in several instances—notably those of glycosuria unattended by any other symptoms of diabetes—the urine could be easily and entirely freed from sugar by its administration, and could be kept so as long as the patient continued the drug. Further, in one severe case of true diabetes, considerable claim may be laid on behalf of the drug that it effected an actual cure; and, in still further accentuation of the general success, it is important and right to add that, in each instance, such was obtained without having had to resort to the aid of anti-diabetic diet. It is true that, before the use of uranium had been recommended, some of the patients had been placed upon a strictly anti-diabetic diet; but, as is so often the case, this was attended with far from completely satisfactory results, although probably in no place or circumstances can a prescribed form of diet be more readily and rigidly enforced than in a public asylum.

Case 1.—He had been the subject of the disease for eight or ten years before he became insane. His mental disorder took the form of intense melancholia, and it was feared at one time that dementia was setting in. At the time of his admission to the asylum, he was excreting about 4,000 grains of sugar daily, in 100 or more ounces of urine. His thirst was great and distressing, and he was rapidly becoming exhausted. Dieting and the free use of codeia were thoroughly tried, but the sugar never fell below a daily output of 340 grains. Usually it was much more, and his thirst continued. The nitrate of uranium was given in a dose of 3 grains twice daily, increased to 6 grains at the end of a week. At the end of three weeks there was only a trace of sugar detectable in the urine, of which 70 ounces was then being passed each day. Meantime all diet restrictions had been withdrawn, and he continued to take 6 grains of the uranium thrice daily for two months, during which time sugar was present in amounts varying from a trace to 100 grains occasionally. However, a dose of 10 grains three times a day was successful in entirely removing all traces of sugar; the urine fell to a normal amount with a sp. gr. of 1,018 instead of 1,034; the thirst ceased, and he became altogether a different man. At the end of another two months the dose was reduced to 6 grains again. No sugar reappeared, but the urine became somewhat excessive in amount and the thirst grew troublesome again. This relapse was only of temporary duration, however, and did not necessitate a return to the larger dose of uranium. He continued to take 6 grains thrice daily for seven months, at the end of

which time the drug was discontinued entirely; and five months later the patient was discharged mentally and physically recovered. We have since learnt that a mental relapse unfortunately took place last January—that is, three months after his discharge from Banstead. He is now in Brookwood Asylum, and apparently is a confirmed chronic melancholic; but for our present purpose it is interesting to learn—and I am indebted to Dr. H. N. Cappe for the information—that, though his urine has been repeatedly examined there, it has never once yielded any sugar reaction. If this result may be attributed to the administration of uranium continued over a period of twelve months, it is, I believe, the most complete success with the drug that has yet been recorded.

The following five cases can scarcely be said to be really examples of diabetes, but rather of glycosuria, for they each have always passed a fairly normal amount of urine and have never shown any abnormal thirst. The two in whom the glycosuria still persists show no tendency for this symptom to increase, although one has been under observation for four years, and the other for nearly three years.

Case 2 is that of a man, now aged 31, who has been in the asylum over three years, and who may now be said to be in a state of secondary dementia following an attack of melancholia. At the time of his admission, and while his mental symptoms were acute, his urine almost daily gave a good reaction to Fehling's solution. The amount of sugar in the twenty-four hours would vary up to 200 grains; on rare occasions it would reach 300 grains, and some days would be absent altogether, but never then for more than two consecutive days. In August, 1896, the effect of uranium nitrate, in doses of 3 grains twice a day, was tried. On the fourth day after its commencement the urine was free from sugar, and remained so for nine days. During the following fortnight sugar was present in small quantities about every third or fourth day, after which it remained entirely absent as long as the drug was continued namely, four months. As no improvement in the patient's mental condition seemed likely, it was then discontinued, and within a week the urine again became saccharine. As a matter of fact, during the last eight months or so, the sugar seems to have permanently disappeared from the urine without the aid of any drug. This has been coincident with the definite onset of dementia—an interesting point, but foreign to the topic of this present paper.

Case 3 was admitted to Banstead Asylum in June, 1894, aged then 37, and suffering from profound melancholia, which has deepened into a condition of stupor, and in which he yet remains. Sugar can still daily be detected in his urine in amounts varying between 300 and 450 grains. The urine itself has always been of phenomenally small quantity, seldom exceeding 35 oz., and often falling below 20 oz. per diem. By the use of codeia and an anti-diabetic diet the daily excretion of glucose could be reduced, but never to below 130 grains. Uranium, however, when the dose had been increased to 6 grains three times a day, was able to free the urine entirely from sugar, and it remained so for the five months during which the patient took the drug. The sugar reappeared on the fourth day after the drug had been discontinued

Case 4 is now dead. He was admitted into the asylum, aged 66, suffering from alcoholic dementia, and died two and a half years later. Up to the last his urine daily contained sugar, in amounts varying between 115 and 370 grains, except for the time during which he was taking uranium.

This, in doses of 6 grains twice a day, caused the sugar entirely to disappear. The patient's state was so feeble, however, that we hesitated to continue the drug.

Case 5 is one of stupor, coming on five years ago in a young man, then aged 23. The exciting cause appeared to be excessive masturbation. Sugar has throughout been present in his urine in amounts varying between 40 and 90 grains per diem, but in an intermittent fashion. Sometimes it would be present on two, three, or four consecutive days, and then absent for a day or two. He was placed upon uranium in August, 1896, along with Case 2, and practically the remarks which have been made upon the effect in that case again exactly apply here. In his case the urine continues to show a sugar reaction in the above-described intermittent manner, but the drug has been discontinued for many months.

Case 6 was a printer, aged 52, and was an example of melancholia associated with most vivid persecutory aural hallucinations, probably the result of chronic alcoholic excess, of which he presented many physical signs as well. Sugar was present in the urine in amounts ranging from 90 to 350 grains daily. Uranium nitrate in doses up to 6 grains thrice daily had very little effect, but when the dose was increased to 9 grains the glycosuria ceased to exist, and did not return while the patient remained in the asylum. He was eventually discharged at the request of his friends, and has, I believe, since committed suicide.

The remaining three patients are cases of true diabetes. Each is inclined to obesity—the man to a marked degree—and each, when not under treatment, complains of distressing thirst and much genital irritation, and passes 120 oz. or more of urine, containing upwards of 4,000 grains of sugar. The treatment by uranium in each instance has been only partially successful. In Cases 7 and 9 it entirely relieved the thirst and irritation, to a less extent also in Case 8, but in neither instance was it able to diminish the output of sugar by more than 50 per cent.

Case 7 is that of a woman, admitted in 1892, aged 52. Uranium has not been, for accidental reasons, given to her in larger doses than 9 grains thrice daily, and its failure to have the power of reducing the daily sugar excretion to below 2,000 grains is therefore not fully proved. And the same observation applies to—

Case 8, a woman admitted eight years ago, at the age of 57.

Case 9 is that of a man, admitted eighteen years ago, at the age of 44. He weighed thirteen stone when only 21 years old, and now maintains a fairly even weight of between eighteen and nineteen stone. His urine was not examined till the year 1895, when a very ravenous appetite caused diabetes to be suspected and found. At the time when he was ordered uranium he was passing 156 oz. of urine with a specific gravity of 1,030, and containing 4,400 grains of glucose. A three-weeks' course of 6 grains twice daily of the drug reduced the glucose by 200 grains. He then took that dose thrice daily for two months, at the end of which time the sugar had fairly steadily fallen to 2,600 grains; the urine to 130 oz., with a specific gravity of 1,026. The dose was cautiously increased up to 30 grains thrice daily, and this he continued to take for a year, at the end of which time he regularly passed about 76 oz. of urine daily, containing from 1,760 to 2,000 grains of sugar.

This case is interesting in demonstrating the large amount of a salt of uranium which can be easily tolerated without any unpleasant symptom. I was also by it able to confirm another of Dr. West's statements—namely, that the drug does not apparently get into the general circulation; for he was good enough kindly to arrange with Mr. Kennedy Orton for an analysis of a sample of this patient's urine, taken during the last month of the twelve during which he was receiving 90 grains of uranium daily. Mr. Orton reports that he was unable to discover any compound of uranium in the sample submitted to him, despite the fact that uranium can be readily detected, even in so great a dilution as 1 in 2,000. In conclusion, I may add that none of my patients suffered any appreciable loss of weight during their treatment with uranium, nor, on the other hand, can it be said that they gained any weight.—*The Practitioner*, *September*, 1898.

16.—DIABETES.

By Drs. Reginald H. Fritz and Elliott P. Joslin.

[The following interesting account of the treatment of this disease during the past seventy-four years, based on 172 cases treated in the Massachusetts Hospital, is taken from Drs. Fritz and Joslin's paper :]

During the first fifteen years the treatment in general consisted of opium, either alone or with camphor and aloes. Cathartics were used liberally, and frequent mention is made of rhubarb, aloes, colocynth, senna, calomel, magnesium sulphate, castor oil, and croton oil. Enemata were employed freely, some of them being especially designated "active." One patient who complained of nausea promptly received a dose of ipecac. Among other drugs in use during this period were quinine and dilute nitric acid, the decoction of sumac and powdered guiac. Blisters and cupping often were used, and one patient "thinks opium and blisters have been followed by the greatest improvement." More severe counter-irritation was ordered sometimes, as appears from the record :—"Apply caustic tissue on each side of the spine." In one case this application proved to be directly injurious. During the period of high mortality, that is, from 1840 to 1855, the following dietary is ordered :—"Lean meat, with a small quantity of stale, dry or toasted bread, avoiding all fatty, farinaceous and saccharine articles. For drink, cold water and weak tea." The use of liquids continued to be restricted, although slippery elm tea now came into use. Alcohol was not given regularly, and blisters no

longer were applied. Leeches appeared to serve in the place of the latter and of issues, for it is recorded:—"Leach (*sic*) bites now ulcerated." Opium continued to be given, but not so largely as previous to 1840. Cathartics were prescribed with freedom, and the liberal use of calomel is suggested by the frequent records of spongy gums and myrrh mouth washes. Iron now was used in the form of the tincture of the chloride or the carbonate. Other remedies employed were argentic nitrate, ammonium hydro-sulphuret, ammonium carbonate, conium, hyoscyamus and valerian, aromatic sulphuric acid, and creosote. During this period the use of yeast was tried by McGregor ("Watson's Practice," p. 872), who stated that it made the patients feel as if they were "on the eve of being blown up." A patient in the hospital was ordered to "take yeast ʒss. in milk *ter die*." This quantity was increased to an ounce daily, and then was resumed and omitted at intervals during a month, the yeast being taken five-sixths of the time. The effect was not that mentioned by Watson, but a sense of constant nausea was the chief resulting complaint.

From 1855 to 1870 especial attention was paid to the selection of a suitable bread, and bran bread, stale bread, brown dyspepsia bread, toasted dyspepsia bread, ship biscuit and toasted ship bread were ordered. Butter, cabbage, cheese, and greens were allowed, but shell-fish and liver were excluded. Liquids at times were restricted, and cocoa was given somewhat frequently. Alcohol was ordered occasionally, and one patient, notwithstanding milk punch was prescribed *p. r. n.*, remained in the hospital but a single day, at the end of which he was discharged unrelieved. Opium was but little used, counter-irritants were discontinued, and there was but little variety in the use of drugs. One patient received a half-pint of iron rust water at dinner. To another, in 1866, was given a half-ounce of cod-liver oil three times daily. As "she likes it and don't have enough," the dose was increased to three ounces three times daily. This maximum dose was reduced in consequence of the production of loose movements of the bowels.

From 1870 to 1885 gluten bread was used, but was discovered to contain 33 per cent. of starch. Patients were advised "to drink as little water as possible," but as much as four quarts of skim-milk were given daily. Opium and codeia were used frequently, but alcohol, blisters, baths, and exercise were not advised as a part of the routine treatment. On the contrary, a large number of drugs were employed, including Fowler's solution, bromide of arsenic, antimony, bismuth, phosphate of zinc, phosphorus, bromide of potassium, iodide of potassium, sulphide of calcium, salicylate of sodium, hydrochloric acid, lactic acid, gallic acid, pilocarpine chloral, ergot, pepsine,

Wilbur's oil, and Shaw's pill. One patient received what was called the glycerine treatment, instituted by Schultzen (Naunyn, "Der Diabetes Mellitus." 1898, 405). On the day after his admission he was given 33 ounces of glycerine, and died comatose on the same day. The coma was accompanied by spasms, to relieve which ether was given, but the house physician apparently feared that the death might be attributed to the effects of the ether.

In the period since 1885, Soya bean bread has been added to the dietary and fats are used with freedom. The use of water is frequently, by no means always, restricted, and the use of skim-milk gradually has lessened. Alcohol, baths, and exercise are not made matters of routine. Opium and codeia are more often used than before, and trials have been made with potassium citrate, lithium carbonate, jambul, salol, salicin, antipyrine, and urethan. Saccharine occasionally is used. Up to this period comatose patients had been treated solely with stimulants and diuretics, and brandy, nitro-glycerine, and oxygen were given frequently at the onset of coma. The use of solutions of sodium chloride or sodium bicarbonate in enema, subcutaneous injection or by transfusion was begun, and eight patients were thus treated. Although these patients died, as had those otherwise treated, it appears from the records that in certain instances life was somewhat prolonged. The patient's mind usually became clearer after the administration of the saline.

The practical outcome of this examination of the records of cases of diabetes treated at the Massachusetts General Hospital during the past seventy-four years can be stated in a very few words. The average mortality of saccharine diabetes has not changed materially, for it was the same in the past thirteen years as in the previous sixty-one years. The dietetic restrictions have undergone no essential alterations in this time. Opium is the only drug which has been persistently used in the treatment throughout this entire period.—*Journal of the American Medical Association, July* 23, 1898.

17.—INFANTILE SCURVY IN NORTH AMERICA.

[The following is Dr. Gordon Campbell's abstract of the American Pediatric Society's Report. This report is signed by Drs. Crozer Griffith, Jennings, and Morse.]

This is the report of a committee appointed at the 1897 meeting of the Society to undertake the work of bringing together and tabulating all the cases obtainable, in order that more light might be thrown upon the disease, especially its

etiology. In all 378 cases seen by 138 observers were collected, and some of the points concerning which information was adduced are as follows :—

Sex.—Males and females were about equally divided.

Age.—Cases were reported from three weeks up to nine years, but over 75 per cent. were between seven and fourteen months, inclusive.

Social position.—The occurrence of 83 per cent. in private practice as against 17 per cent. in hospital practice, shows the much greater tendency to the disease among the well-to-do, a fact which has been pointed out before. The hygienic conditions, too, were described as good in the vast majority of cases.

Previous health.—Of preceding diseases none could be looked upon as an etiological factor; indigestion was frequently present, but was rightly considered rather as a result of the causes producing the disease than a cause in itself.

Family history.—This seemed to have no bearing on the disease.

Diet.—In 275 cases, diet in the opinion of the observers was considered directly responsible for the production of the disease. The kind of food used at or shortly before scurvy developed varied greatly. In 12 cases breast milk formed the whole or greater part of the dietary. Milk, raw or prepared, was the food in 162 cases, and of these sterilised milk accounted for 115, and Pasteurised for 21. Only 24 cases had been fed upon non-proprietary amylaceous food, but 214 cases, or 60 per cent., had been taking proprietary foods. Of these Mellin's Food was used in 83 cases, Malted Milk in 48, Condensed Milk in 38, Reed & Carnrick's Soluble Food in 13, and Imperial Granum in six. Besides these ten other proprietary foods had been used in one or two instances each.

Symptoms.—Of the most prominent symptoms, pain on motion and handling was most constant, being present in over 80 per cent., and in one-third of these pain was also present when at rest. This symptom gives rise to another, paralysis or pseudo-paralysis or rigidity of the limbs from the pain caused by motion. The unnatural position of the limbs, weakness of the back, and depression of the sternum, emphasised by Barlow as characteristic when present, were noticed in a considerable proportion of cases. Swellings either in the long bones or about the joints formed a prominent feature, and in 49 cases proptosis was noted. With regards to the condition of the gums, the evidence collected bears out the generally accepted opinion that sponginess or swelling is almost a constant symptom. Thus, in only 16 cases was it distinctly stated that the gums were not affected. Of 45 cases in which there were no teeth, in 21, or nearly one-half,

the gums were normal. The committee made the rather misleading statement "that affection of the gums may occur equally well when there are no teeth as when teeth have developed." For if, as the figures show, the gums were affected in 86 per cent. of those with teeth and in only 53 per cent. of those without teeth, the presence of teeth must be taken as the factor determining the increased liability to this symptom in the former class. Hemorrhages, cutaneous and from mucous membranes, fractures, fever, bowel movements, urine, and anæmia, were all considered separately without anything new of importance being elicited. The association of rickets with scurvy is shown to be no more than the common origin of both in a faulty diet.

Treatment.—The quick response to appropriate treatment is one of the striking features of the report. "There is certainly no disease for which a more specific treatment can be said to exist." Marked improvement took place in 80 per cent. of the cases within one week from its institution. Of the 326 cases of which records suitable for study were received, the method of treatment in three-fourths was by change of diet with or without drugs, no fruit juice being employed. An elaborate series of tables is given, from which are drawn the following conclusions as to the etiology and treatment:—(1) That the development of the disease follows in each case the prolonged employment of some diet unsuitable to the individual child, and that often a change in diet which at first thought would seem to be unsuitable may be followed by prompt recovery. (2) That in spite of this fact regarding individual cases, the combined report of collected cases makes it probable that in these there are certain forms of diet which were particularly prone to be followed by the development of scurvy. First in point of numbers here are to be mentioned the various proprietary foods. (3) In fine, that in general the cases reported seem to indicate that the farther a food is removed in character from the natural food of a child, the more likely its use is to be followed by the development of scurvy. Twenty-nine of the 379 cases were fatal, and in six the result of autopsies were reported. The report is signed by Dr. J. P. Crozer Griffith, Charles G. Jennings, and John Lovett Morse.

Dr. Augustus Caillé, while agreeing with the conclusions, submitted a minority report based upon the cases he had collected, in which he expresses the opinion that scurvy is a chronic ptomaine poisoning due to the absorption of toxins and following the prolonged use of improper food, abnormal intestinal fermentation being a pre-disposing factor. Sterilising, Pasteurising, or cooking of milk food he does not consider *per se* responsible for the scurvy condition.—*Pediatrics August*, 1898.

18.—THE THYROID.

Perhaps in no field of experimental medicine have the reports of the past half of the decade been so discordant and difficult to bring into correlation as those bearing upon the physiological activity of the thyroid gland and its kindred structures. While there have been published excellent *résumés* of small fields of this discussion, the ground as a whole has not been thoroughly covered, so that the excellent and extensive discussion by Dr. R. H. Cunningham, "Experimental Thyroidism," *Journal of Experimental Medicine*, vol. iii., 1898, page 147, is especially opportune. In this is presented a complete and well-rounded contribution, treating of all the important work that has gone before, with an extended series of experiments which have been conducted by the writer, with the view of bringing the many discordant views into some sort of harmony. As a result of his studies the writer draws the following conclusions:—(1) Absolutely fresh thyroid gland is not poisonous, in the usual sense of the term, when absorbed through the alimentary canal. (2) The symptoms of induced thyroidism are manifestations of an intoxication resulting from the ingestion of decomposed thyroid material, a conclusion that agrees in part with the previously related observations of Lanz. (3) The so-called experimental thyroidism is not specific for the thyroid alone, for the ingestion of many substances derived from animal tissues other than the thyroid gland may produce an intoxication strikingly similar in every respect to that of experimental thyroidism. (4) Most, if not all, animal tissues yield substances which, if injected in large quantities directly into the circulation or beneath the skin, will produce an intoxication often very similar to that produced by injections of various substances derived from the fresh thyroid tissue. (5) The effects resulting from the intravascular or subcutaneous injections of aqueous extracts, decoctions, and concentrated extractives of the thyroid tissue, of the thymus, of muscle, &c., are by no means necessarily indicative of the function and the action of the hypothetical internal secretions of the same tissues during life. (6) The utilisation of the fact that ingestion of decomposed thyroid material produces on certain occasions an intoxication with certain symptoms similar to those of Graves' disease is not justifiable for the furtherance of the theory that the symptoms of exophthalmic goitre result from an overproduction of the thyroid secretion. (7) Our results lead us to conclude with Drechsel that the fresh thyroid tissue yields at least probably two substances that are capable of palliating the symptoms of the acute cachexia in totally thyroidless dogs. (8) The thymus tissue also yields one and probably two substances that

are equally as capable as the thyroid extractives of palliating the acute cachexia of totally thyroidless dogs. (9) Neither of the above substances is an enzyme, nor does either contain iodine. (10) Neither the feeding of minced raw thyroid glands, nor the injection of aqueous thyroid extracts, decoctions, and concentrated solutions of the extracted palliative thyroid principles is capable of keeping totally thyroidless young dogs alive longer than a few weeks (possibly three weeks). Still less capable are the thyroid preparations containing decomposition products. (11) The presence of one, or usually several, small accessory thyroid bodies, which gradually hypertrophy and wholly or partially assume the functions of the excised thyroid lobes, accounts for the occasionally long survival of thyroidectomised, thyroid-fed young dogs. (12) Totally thyroidless young dogs are so quickly overwhelmed by the cachexia, and the intervals between the thyroidectomy and the onset of the severe dyspnœic attacks, and subsequent deaths, differ so slightly, no matter which of the usual varieties of fresh food is employed, that kinds of fresh food cannot be unquestionably affirmed to influence the onset of the cachexia in any especially definite manner. Animal foods, in which constituents poisonous to rabbits have developed, probably hasten slightly the onset of the severe symptoms, and the vaunted remarkable modifying influence of a diet of ordinary milk, such as Breisacher observed, does not exist in the case of the totally thyroidless dog. (13) Monkeys whose general metabolism is disturbed in consequence of the removal of a greater portion of the thyroid gland, evidently become more susceptible to those constituents of meat that are poisonous to rabbits, and sufficient clinical evidence exists for concluding that probably a like susceptibility to animal foods containing such constituents also exists in men when the function of the thyroid gland is sufficiently disturbed. (14) And, finally, as regards the thyroid factor in the pathology of exophthalmic goitre, the writer agrees with Grey, that the majority of the symptoms in many patients with that disease can apparently, from an experimental standpoint, be as plausibly explained by the hypothesis of partially deficient thyroid activity as by the hypothesis of augmentation of thyroid function.—*From a leading article in the Medical Record, June* 4, 1898.

19.—OPIUM: ITS USES AND CONTRA-INDICATIONS.

By J. L. Faithfull, M.D., Sydney.

[Perhaps all the views put forward in this paper will not be agreed to. Much has been said and written of recent years on

the danger of morphine masking the symptoms of disease, and perhaps this view has been carried a little too far.]

Opium usually relieves pain whether it be what is called merely functional, or such as depends on inflammation, or the result of wounds, or pain due to destructive organic processes, cancer for instance, by its soothing effect upon the brain causing it to be less capable of perceiving painful impressions, although the disease itself may still be progressing. As a local application for pain, opium or morphine is often exceedingly useful, although frequently inferior to aconite or belladonna and some other drugs, cocaine for instance. The effect of opium in allaying irritation, and hypersecretion of mucous membranes is often remarkable. It is necessary, however, to remember that it should only be used in the early stages of catarrhal irritation of the mucous membranes. Again, it is particularly useful in stopping the reflex mechanism of cough in phthisis, when the cough is a distressing, hacking, and useless one, excited by the presence of masses of diseased lung tissue, which are the cause of irritation, and which cannot be got rid of. Piscidia erythrina or codeina are also very efficacious in such cases when opium cannot be used. Opium, or one of its derivatives, frequently arrests the various form of nausea and vomiting, whether stomachal or reflex, viz., the vomiting of pregnancy, sea sickness, the vomiting which accompanies the passage of renal or biliary calculi. In peritonitis, whether puerperal, traumatic, or due to inflammatory extension from neighbouring organs or tissues, the valuable effects of opium, or one of its preparations, is well established; also in arachnitis, pachymeningitis, basilar meningitis, or cerebro-spinal meningitis. Clinical facts tend to show that opium or morphine frequently accomplish more than any other remedy. The quantity of opium necessary varies in each case, but enough should be administered to relieve rigidity and spasm.

Dr. Loomis, of New York, has demonstrated the remarkable fact that morphine hypodermatically is a most important agent in the cure of uræmic convulsions, puerperal or non-puerperal. Scanzoni first used this remedy in puerperal convulsions, and spoke highly in its favour, but Loomis has called attention to the fact that morphine administered hypodermatically first tends to arrest muscular spasms by counteracting the effect of the uræmic poison on the nerve centres; second, by establishing profuse diaphoresis; third, by facilitating the action of cathartics and diuretics, especially the diuretic action of digitalis. Death in coma has, however, shortly followed the exhibition of this remedy in several of the above cases. In the various forms of neuralgias, morphine injected hypodermatically, especially if in close proximity to the affected nerve or nerves, frequently

affords instantaneous relief, which proves curative in a certain proportion of cases. In surgical practice, before the administration of chloroform, morphine is frequently injected hypodermatically to lessen the paralysing effects of chloroform on the cardiac and respiratory centres, and to diminish the subsequent shock due to the administration of the anæsthetic, and to the performance of the surgical operation. It also is said to have the following advantages:—(1) Of lessening the stage of spasm and rigidity. (2) Of reducing the quantity of anæsthetic required to a minimum. (3) Of prolonging the stage of insensibility. When thus used, the hypodermatic injection of morphine should be small, say from $\frac{1}{8}$ to $\frac{1}{6}$ of a grain, it should also be administered forty to sixty minutes before beginning the inhalation of chloroform. If given later than this, it is most likely to cause nausea and vomiting during the inhalation of the anæsthetic. As an hypnotic, with the exception of chloral, opium is the most reliable drug. In fevers, whether inflammatory or specific, sleeplessness that quickly wears out the strength of the patient is a most dangerous symptom, and with it may be noisy and furious delirium, wandering or muttering, picking of the bed clothes, twitching of the muscles, &c., here opium (with or without brandy, or some other stimulant), in small doses or combined with antimony, may be the means of saving an otherwise hopeless life. In acute mania where prolonged wakefulness, great excitement, destructive and suicidal tendencies, with persistent refusal of food, drink, or medicine are present, morphine injections act more promptly, and are productive of the greatest benefits. The dose should be gauged by the arterial tension. If arterial tension is low, the dose should be small. If arterial tension high, with quick pulse, a full dose is necessary. In melancholia, small stimulant doses are highly beneficial.

Cases in which it is inadvisable or dangerous to use opium or morphine.—Young children usually bear opium very badly, and to them only the weaker liquid preparations should be given, if at all. The active principle of opium passes out with the milk, so it is well to avoid, if possible, giving opium to nursing women, for fear of dangerously affecting the child. As a rule, opium and its preparations do harm in all gastro-intestinal maladies, in which there is a deficiency in the proper secretion, or a suspension of the function of the liver or kidneys. Opium should not be given shortly before or after a meal, as it lessens the secretion and movements of the stomach, and thus hinders digestion. Opium is contra-indicated in vomiting of cerebral origin; also that produced by uræmia or cirrhosis. It is well to avoid its use in fully developed bronchitis when the secretions are copious and the expulsive power feeble. Chronic insomnia,

independent of any very notable disease, should not be treated with opium, if possible, for the opiate soon loses its influence, and must be gradually increased to produce hypnotic effects, and there is a great danger of producing the opium habit. Opium in lethal doses dilates the arterioles and veins. Belladonna contracts them, and, by energising the cardiac movements, substitutes an active for a passive congestion. It cannot be too strongly insisted on, in this connection, that belladonna in too great a quantity, or its action too long continued, exhausts the irritability of the unstriped muscular fibre, and thus produces the very state which its administration is intended to relieve. The state of the pupil, the action of the heart, and the condition of the reflex movements are the guides to the administration of belladonna in cases of opium narcosis. The smallest quantity of belladonna which will dilate the pupil, raise the tension of the arterial system, deepen the respiration, and re-establish the reflex irritability should be used. It is a fatal error to attempt to restore a patient in opium narcosis, to complete consciousness, by repeated doses of belladonna or atropine. The action of these agents combined is to produce profound stupor, and this is not a condition of danger so long as the pulse, respiration, and reflex movements are in good condition.—*Australasian Medical Gazette, August* 20, 1898.

20.—SOIL IN THE SPREAD OF CERTAIN DISEASES.

By John Robertson, M.D., B.Sc., Medical Officer of Health, Sheffield.

It has, of course, long been known that surface soils contain a large number of micro-organisms of different species. Both number and variety differ in accordance with certain unascertained conditions. Roughly speaking, there are more present in "made" than in virgin soils. The number also varies with the presence of certain organic matters in the soil, and it is greatest at a distance of twelve to twenty-four inches below the the surface. In undisturbed soils it rapidly diminishes at a depth of three to four feet from the surface. Occasionally, however, "faults" in strata allow organisms to be carried to considerable depths.

In some experiments which Dr. Gibson and I carried out we found that when the bacillus typhosus was planted at a depth there was an undoubted tendency to grow upwards towards the surface rather than downwards, a process distinct from that noted of upward diffusion of bacillus anthracis by the agency of earth-worms. I believe that this tendency to upward growth

has a most important bearing upon the spread of disease by soils. In my own experiments I found that during the winter months organisms disappeared from surface soil long before they had disappeared from the subjacent strata, and I was led to believe that the deeper layers formed a sort of shelter from which the organisms sallied forth to the surface during the warmer months. Among the organisms found in soil some are pathogenic; for instance, it has long been recognised that the sub-cutaneous injection of a quantity of surface soil into a guinea pig was liable to be followed by tetanus or malignant œdema. Surgeons, again, have noted the difference in the healing qualities of wounds contaminated with surface soil as compared with the practically sterile coal dust of a deep mine. Diseases due to specifically contaminated soils in temperate climates may be divided into those in which the specific organisms have (*a*) a general and wide, and (*b*) a local, distribution. Tetanus, malignant œdema, and the pyogenic diseases belong to the first group, while typhoid fever, epidemic diarrhœa, cholera, swine fever, and anthrax are included in the second. Such diseases as tuberculosis, leprosy, epidemic pneumonia, glanders, rabies, and scarlet fever do not appear to be propagated to any extent by growth in soil, although dust plays a most important part in their diffusion.

It is to the second group that I would here call special attention, taking typhoid fever as a type. The examination of a series of mortality maps for England and Wales, covering twenty-five years, shows that typhoid fever mortality is high in certain districts with the utmost regularity, and is conversely and consistently low in other districts. Comparing the yearly maps, it will be noted that when an outburst of typhoid fever occurs in a district which had hitherto possessed a low death-rate from the disease, that the disease does not return to its normal rate during the following year, but appears to right itself slowly. This I regard as a point of importance as indicating that under certain soil conditions the organisms of enteric fever dies out slowly. If we look at smaller areas, such as Salford and Bristol, we find the same general observation holds good. In Salford the mortality rate is high and in Bristol low with the utmost regularity. So with the smallest areas, as in a group of eight houses where deaths from the disease occurred in each year of the period of eight and a half years under observation.

In a series of experiments recorded in the *British Medical Journal* for January 8, 1898, I showed that the bacillus of typhoid was capable of living and multiplying in the ordinary surface soil. It was demonstrated that the organism died out during the cold months of the year except where it was

artificially fed with organic matters. I believe that the water-carriage of typhoid infection is an important subject, but, at the same time, I think the amount of attention it has received has, to a large extent, obscured the relatively much more important subject of dust and filth-borne typhoid. In my experience certainly over 80 per cent. of cases in town districts cannot be accounted for by direct infection or by water or milk carriage of the infection. A large field awaits investigation on the relation to typhoid fever of local habits and of method of drainage and refuse disposal. Another point is the possible influence of ground water, as observed by Von Petenkoffer. In my own observations I have noted areas are more liable to endemic typhoid fever when the ground water is near the surface. A point on which I made several series of experiments, and which, I think, is of some practical importance, is that bacillus typhosus quickly dies out in grass-covered areas. In all our large towns we have waste ground, which might possibly be prevented from becoming distributors of enteric fever if we planted them with grass. The breeding ground of each disease-producing soil organism requires to be dealt with separately, as there are wide differences in the habits and requirements of each, so far as we can at present judge. I have dealt only with that of typhoid because in it we have a well-marked organism, on the one hand, and a valuable series of statistics on the other. Much investigation is needed into the conditions of soil most favourable to diarrhœal and other pathogenic organisms.

The next important question is how the organism is transferred from the soil to man. I feel certain that dust under certain conditions is the chief agent in that transference. Many observations have been made upon this point by Continental observers that I think we may assume the truth of the proposition as regards dust. Those who were engaged in bacteriological work ten to fifteen years ago will remember how seldom plate cultivations became contaminated with air organisms in our moist chamber. Such a chamber was ready for use in an hour's time, that is to say, the organisms had subsided during that period and left the air sterile. Any contamination was usually traced to spores, which are known to be very small and light. Recently I have had the opportunity of making extended observations in a large lead-lined chamber six feet high, the walls of which were wetted, and it was found that plates of gelatine exposed for fifteen minutes at the bottom of this chamber became contaminated, first, with micrococci, bacilli, and moulds, afterwards with moulds, and at the end of two and a quarter hours (as a mean of five observations) they ceased to become contaminated. Observations were made at intervals as to the number of particles in the air by Aitken's

dust-counter and also by a beam of light. It was found that when the air had become sterile, so far as the gelatine plates were concerned, it yet remained crowded with particles of dust, which were being carried about actively by convection currents. The practical conclusion is that the infectious particles in the air are heavy and quickly subside when the air is allowed to remain still. I am inclined to believe that the Raff theory is the right one, with a few exceptions, as in the case of the spores of certain moulds. If this be the case it goes far towards explaining why only persons living in or entering an infected area become infected, for it pre-supposes such heavy particles will not travel great distances, but will rather tend to contaminate food and water in the area. For instance, during a long, warm summer, one area may infect numerous other areas, and so one gets an extension and wide-spread outbreak in contradistinction to the much more localised outbreaks which one gets during short summers. While this is the case there is abundant evidence to show that there are certain limitations to the spread of typhoid infection by dust. It is not possible to review here the work of Flugge, German, and others as to the conditions needed for dust distribution, but it seems to me that the work fits in well with the dust theory which one arrives at from practical experience of the methods of spread of typhoid fever.—*The Medical Press, August* 10, 1898.

21.—SEWAGE DISPOSAL.

By Hugh R. Jones, M.A., M.D., D.Ph.,
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Frank Robinson, M.D., Ch.B.

[This subject has received so much attention lately that the following excerpt from Drs. Jones and Robinson's paper is included here.]

The bacteria by which the purification of sewage is naturally effected are present in the sewage itself, and it has been shown experimentally that they exist also in the superficial layers of the soil to a depth of four or five feet. They belong to both the aerobic and the anaerobic groups. The aerobic, the nitrifying organisms, are chiefly found nearer the surface of the soil; and if oxygen be freely present they destroy organic matter in an inoffensive manner, forming ammonia, nitrites, and nitrates. Otherwise, the anaerobic bacteria which tend to putrefaction soil, and are more resistant to the action of antiseptics than the

come into play: these are found chiefly at a deeper level of the organisms of nitrification. The fallacy of the so-called disinfectant methods is thus obvious: by killing the organisms by which an inoffensive purification may be effected, the field is left clear for putrefaction, thus ensuring the nuisance which it was desired to avoid. Partial deodorisation, says Dibdin, is easy, but true disinfection is only obtained by great dilution with highly oxygenated water (by which the rapid nitrification of organic matter by aerobic bacteria is encouraged, and which is impracticable), or by filtration through the soil, or by direct bacteriological treatment.

The changes that occur in sewage when treated by land filtration may be thus classified:—(1) There is a mechanical arrest of the grosser particles on the surface, influenced by the porosity of the soil. (2) There is a chemical interchange between the salts of the soil and those of the sewage, lime salts especially being necessary as a base for the nitrates. (3) A biological process of nitrification occurs, and is influenced by the porosity of the soil, as affording a greater or less extent of surface for the growth of the bacteria, and also as regulating the amount of air contained.

During the last decade the stimulus of the growing science of bacteriology has resulted in most important series of experiments, conducted on strictly scientific lines. They have had for their object the disposal of sewage by purely bacteriological processes, and have chiefly aimed at ascertaining what materials are best suited for the purpose, and what rate of flow of the sewage through the filtering medium gives an effluent which shall be at all times satisfactory. The experiments of the State Board of Health of Massachusetts were conducted from 1887 to 1890. The experiments conducted by Mr. Dibdin for the London County Council at Barking Creek elaborated the methods just described. A series of experiments was first conducted with small filters, the object held in view being "the attainment of the highest degree of speed consistent with such purification as would remove all objectionable characters, such as odour, colour, and liability to putrefaction." The tanks were of the same area as at Massachusetts, and were filled respectively with burnt ballast (clay), pea ballast (shingle), coke breeze (coke fragments, $\frac{1}{2}$ inch in diameter), sand, and a proprietary material.

The amount of oxidisable material removed by these media was:—42 per cent. in the case of sand; burnt ballast, 43; pea ballast, 52; proprietary material, 61; coke breeze, 62. Sand proved too fine for efficient purification and burnt ballast too coarse. Coke breeze not only gave the best results, but was the cheapest.

The second series of experiment was conducted on more practicable working lines. The material used was coke breeze to a depth of 3 feet extending over an area of one acre, and covered by 3 inches of gravel to prevent the coke from floating. The filter was underdrained, and could be filled and emptied at will. The tank was worked eight hours each day, and six days in each week, and by gradual increase of the amount $1\frac{1}{6}$ million gallons of sewage were eventually treated daily on one acre. Preliminary experiments as to rapidity of filtration showed the absolute necessity for rest and aeration of the beds, as they became putrid when overworked, but speedily recovered during a period of inaction.

Purification during 1894-5, including the well-remembered period of hard frost, varied from 75 to 81 per cent. The effluent showed no signs of putrefaction however long kept, and fish lived in it at the point of discharge. "The experiments, taken as a whole, show that sewage, especially if previously clarified by precipitation, may be purified to any desired degree. . . . If a reduction of 75 per cent. in the oxidisable organic matters in solution be considered as sufficient, the quantity that can be treated per diem on one acre of coke breeze . . . is 1,000,000 gallons, which gives a required area for the treatment of the whole of the Metropolitan sewage . . . of 180 acres only."

The Urban District Council of Sutton, in Surrey, have this process in operation for their sewage, and consider their results most satisfactory. The best effluent is obtained from coke breeze, the purification obtained being 74 per cent. A further development has been brought about at Sutton, by which a still purer effluent has been obtained. A bacteria tank is constructed (at an estimated cost of 3d. per square foot) by digging out clay to a depth of 3 feet, burning it and returning it. It is then inoculated with nitrifying organisms in order to start the process more rapidly. The crude sewage is run on to it after simple screening, and there is no previous chemical precipitation of the suspended organic matter. Sixty-six per cent. of the oxidisable material and 95 per cent. of the suspended matter is removed by the tank, and the filtrate is then passed through a bed of coke breeze and gravel. This results in a final effluent containing only 13·5 per cent. of the original oxidisable material and practically no suspended matter, and is quite sweet and keeps well. Sewage has been treated at the rate of 773,000 gallons per acre per day with these results. There is practically no sludge question to be dealt with, and the great economy is obvious.

A simplification of these processes is now in operation at Exeter, and is known as the "septic tank" method. The crude

sewage, instead of being run on to burnt ballast, flows slowly through a covered tank capable of holding eighteen hours' flow of sewage. By the action of the bacteria present in the tank, and subsequently on coke breeze beds, as at Sutton, an effluent is obtained with practically no suspended matter, and with oxidisable matter diminished by more than 80 per cent., and which is found to be entirely satisfactory. Messrs. Pearmain and Moor, in their report on the process, suggest that a fixed quantity of nitrates in the effluent should be insisted upon as a guarantee of true purification. As at Sutton, there is no sludge difficulty, the deposited matters passing into solution as purification goes on.

Reviewing the various processes touched upon in this paper, there can be little doubt as to the superiority of the group which includes the use of land and the more recent methods of filtration. Apart from the efficiency of purification, which is beyond all comparison, it appears to us that a decided preference should be given to those processes which are based on Nature's methods. Discriminating further between land and artificial filtration, we cannot do better than summarise briefly the conclusions of Messrs. Pearmain and Moor as to the advantages of artificial filter-beds. Their principal points are that there is a comparatively small amount of space required; there is no fear of nuisance from fouling; purification is most complete; the process is automatic, and but little reliance on the individual judgment of attendants is necessitated; while there is no consideration of crops to interfere with efficient performance of the real object in view. When to these considerations is added Dibdin's estimate that if half the sewage of this country were treated as at Sutton a sum of £60,000,000 sterling would be saved, the writers consider that a strong case is made out for the disposal of sewage by bacteriological methods.—*Liverpool Medico-Chirurgical Journal, July*, 1898.

DISEASES OF THE NERVOUS SYSTEM.

22.—A CASE OF CLIMACTERIC INSANITY.

By John Benjamin Hellier, M.D. (Lond.),
Lecturer on Diseases of Women and Children in the Yorkshire College of the Victoria University, and Surgeon to the Hospital for Women and Children at Leeds.

The following case furnishes an interesting study of the genesis of insanity in a patient suffering from disorder of the uterine function and of the pathological relations of the menopause :—

Mrs. A. was 45 years old, mother of two grown-up children. She had then suffered for nine years from severe menorrhagia, which had caused great anæmia and weakness. The menorrhagia had first commenced after an attack of diphtheria, whilst living in an insanitary house. She had thus become a chronic invalid. Exertion brought on palpitation, and she appears to have avoided all fatigue. She was not able to walk twenty steps, for six years had been carried up and down stairs, and had not dressed herself for nine years. She spent her days lying upon the sofa. She had formerly been under the care of an eminent specialist, but had become resigned to chronic invalidism and helplessness. No local treatment had been adopted. I could find no obvious pelvic disease on bimanual examination, nor any disease in any other part except the great anæmia. Her disposition was amiable and affectionate, and she was quiet and gentle in manner. She was described as being very sensitive, easily pained in her mind, easily moved to tears, nervous and over anxious about her children's health, and fearful about small matters. She had not been regarded as hysterical, and there was no history of insanity in the family. Recently some slight irregularity suggested that the menopause might be near. When I first saw her, the question of dilating and curetting the uterus was raised, but as she seemed to be improving a little under iron, and as the menopause was probably near, this was deferred. In April, 1893, she had a small abscess in the neck, due to the suppuration of a gland at the anterior edge of the sterno-mastoid; the cause of suppuration was not known. To effect a prompt and radical cure she was put under ether by a skilled anæsthetist, on April 19, 1893, and the gland was incised and scraped, the whole operation occupying perhaps five minutes. She took the ether well, and recovered quickly from it. From this time symptoms of mental alienation commenced. She seemed rather strange in the first few days after operation, and at the end of a week said to her husband:—"I have walked five miles by inches"—a totally incoherent and irrelevant remark. She began to show unusual reticence and loss of interest in household affairs. After this, there was constantly in her mind the idea that she was accused of having done something wrong, and she needed to be constantly assured that such was not the case. The conviction grew upon her that punishment and death were to overtake her and her children, on her account. She showed great ingenuity in self-accusation, and thought that every passing vehicle was coming to take her to prison. At the end of June she went to the Lake district. While there she wrote a number of incoherent letters; all were destroyed. On her return, in August, she was found to be decidedly worse. She told me that in these letters she had accused herself of crime; that she knew that she was out of her mind at the time, but that the letters had got into the hands of the municipal authorities, and that she and her children were to be put to death in consequence. In August, 1893, she suddenly ceased to menstruate. Her last two periods had been copious. She has not been unwell since. Now we come to a specially interesting point. Her general health began to improve. She was eating and sleeping well. At the beginning of September she rose one morning, dressed herself, and came downstairs, to the great astonishment of her friends, who had not known her to do this for nine years. From this time she began to occupy herself with domestic matters. She gained flesh; her thin, flabby muscles developed and strengthened in a marked degree. Her family were so delighted at this physical resurrection that they were almost consoled for the time for the mental aberration. She showed no alienation from her husband and children, but rather a more demonstrative affection. On some days she would weep and moan a good

deal; on others she would be quieter, and her attention might be occupied with ordinary matters for a short time, but she never forgot her delusions, and never had a lucid interval. She was quite easy to manage, and was not sent away for treatment, and no attendants but her husband and daughter were needed.

I reported this case to the North of England Obstetrical and Gynæcological Society, in April, 1894, and up to then no improvement could be recognised. The remaining notes were sent to me by her husband, for she has removed from the neighbourhood.

She first showed real improvement in the spring of 1895. This was very gradual. By degrees she took more interest in what was going on, although the delusions were never absent, the sphere of healthy interest gradually expanded, and the sphere of delusion contracted and became less real and less intense. In the spring of 1897 it could be no longer noticed. She has now (1898) an excellent appetite, and is stouter and stronger than at any period of her married life. She attends to all her household duties. She can walk a mile without resting. All her delusion is gone. She has a little more tendency to suspicion and irritability than before the illness. She has very little remembrance of her illness.

The causes which conspired to induce insanity in this case appear to have been as follows :—(1) There was marked and prolonged anæmia, the loss at every period being very considerable. Anæmia is a potent cause of mental debility. (2) There had been nine years of chronic invalidism and sofa-life. This withdrawal from active participation in the business of life, and the abandonment of effort to rise and act is, from a psychical point of view, a most enervating factor. (3) The time of the menopause was approaching, which is one of relative liability to mental disorders. (4) The spontaneous occurrence of suppuration in one of the cervical glands is probably evidence of an unsatisfactory condition of the general health. (5) The excitement connected with the performance of an operation, though only a small one, is, in a neurotic subject, an occasional factor in the production of insanity. An interesting discussion of this point occasions a paper by Dent, on "Insanity after Operations in General," in the *Journal of Mental Science*, April, 1896. (6) The "last straw" was found in the effect of anæsthesia, for in certain subjects, where a predisposition exists, anæsthesia may act as the determining cause of mental attacks. The rapid improvement in physical condition which coincided with the onset of the menopause is remarkable. It is attributable in the first place to the cessation of the menorrhagic drain on the strength, but the singular manner in which the bed-ridden invalid suddenly rose and walked and worked must be partly attributed to the diverted course of ideas in the mind, so that she was no longer bound by the conviction that she could not or ought not to rise and exert herself. The ultimate recovery of mind as well as body is most satisfactory. The question

arises whether thorough local treatment should not have been adopted early in the case when it was found that the menorrhagia persisted, and made the patient so weak and incapable.

Thorough dilatation and curetting is indicated as a first measure in intractable menorrhagia. If after due trial and waiting this proves useless, there is then a strong case for oöphorectomy. It is better to induce an artificial menopause than to allow a patient to be permanently incapacitated by uterine hemorrhage, especially seeing that small myomata are often the undiscovered cause of such a condition. It has been said that oöphorectomy is sometimes followed by insanity. So is the natural menopause. It is possible that in the present case removal of the appendages might have been followed by the same mental symptoms that actually occurred. In that event the case might have been quoted with great plausibility as an example of the effect of oöphorectomy in causing insanity, but such reasoning would have been fallacious. The case would then have no more proved that oöphorectomy should not be performed than that anæsthesia should not be induced. On the other hand, it is possible, and even probable, that arrest of the menorrhagia by timely induction of the menopause some years before might have produced a rapid and permanent cure without any of the mental complication that caused so much distress.—*Medical Chronicle, June*, 1898.

23.—POST-OPERATIVE PSYCHOSES.

This important subject, which was fully discussed at a recent meeting of the Surgical Society of Paris, is thus summed up by the *Edinburgh Medical Journal* for July, from the *Révue de chirurgie* for April and May.

M. Picqué questioned the accuracy of the common belief that mental symptoms following an operation are related to each other as cause and effect. After major operations upon the uterus and its appendages there may ensue a delirium, which may be due to iodoform or septic intoxication. Mental disturbances are, however, more common after minor gynæcological operations, and are rather to be ascribed to the peculiarities of the patient than to the nature of the operation.

M. Richelot had observed eleven cases in which cerebral disturbances had followed upon operations in the sexual organs. There were two cases of vaginal hysterectomy followed by mania, and ending in recovery. There were three cases in which minor operations were followed by insanity, but in which the patients were really insane before operation, and had

disguised their condition. In the remaining six cases the patients were predisposed to mental instability, and the operation only played the part of the exciting cause. The result would probably have been similar had the operation been performed on any other part than on the genital organs.

M. Regnier was of much the same opinion, and maintained that no operation really "gives birth" to insanity. Like the anæsthetic, an operation may reveal certain latent tendencies, but does not create them. In three cases of acute mania following ovariotomy there were marked hereditary or other predisposing causes. In old women, in whom an operation may be followed by symptoms of mental impairment, we are really dealing with patients in whom the nervous system is undergoing senile decay, and the operation merely precipitates the breakdown. It is important that the surgeon should be able to recognise the hysterical or neurasthenic patient, who is remarkable for the disproportion presented between the symptoms complained of and the lesion discovered on examination. Such patients may improve for a time after operation, only to develop fresh psychical troubles at a later period.

M. Monod had observed a fatal case of delirium, following double ovariotomy, which was apparently of uræmic origin, and a second case of mania in a male, after amputation of the thigh during acute septicæmia; also a third, an abdominal hysterectomy for fibroids, the patient developing insanity six months after the operation, apparently as the result of domestic anxieties (loss of husband and fortune).

M. Segond has little faith in the production of mental troubles by gynæcological operations. Of six hundred and forty-two cases of hysterectomy and bilateral ovariotomy, he had only met with four in which the operation was followed by psychoses, and in all of them the patients were predisposed by inheritance or other factors. Whenever there exists a proper indication, the surgeon should not be deterred from operating through fear of any subsequent mental instability.

M. Lucas-Championnière held similar views, and had observed the disappearance of mental symptoms complicating menstrual disturbances by operative treatment directed to the latter.

M. Routier had observed violent delirium following an operation for appendicular peritonitis, which recovered completely at the end of five weeks; also melancholia, some time after instituting drainage of the bladder for enlarged prostate, which disappeared on closing the fistula; also delirium with hypochondriasis, after double castration.

M. Hartmann did not think that the nature of the operation had much influence on any subsequent mental disturbances which might develop; ovarian castration had no special

tendencies in this direction. He was inclined to lay stress on the profound mental impressions which may attend any operative interference, and on septic and other intoxications.

M. Potherot maintained that if we exclude the pseudo-mania, or delirium resulting from alcoholism, from the anæsthetic, from iodoform, &c., it will be found that real post-operative mania is very rare; that the subjects of it, while chiefly met with in gynæcological practice, are the victims of sufficient mental predisposition to account for its occurrence.

M. Tuffier referred to the infrequency of post-operative delirium in children. In a boy of 12, on whom he had operated for the radical cure of inguinal hernia, the mental disturbance was evidently hysterical, and of very short duration. He had observed mania, lasting for thirty days, after clearing out the mastoid antrum in a woman whose mother had died insane.

M. Poirier had met with three cases of mania after ovarian castration. One of these recovered within a month, while the other two committed suicide.

M. Bouilly, among several thousand operations, had only observed five cases, and two of these were insane before the operation; a third was in a state of senile dotage; in the remaining two, the mania followed upon unimportant operations, and was quite unexplained. He believes that the exaggerated fear of operation, which one often meets with in women, is an important factor in the production of mental instability, and recommends regarding it as a contraindication, when very pronounced.—*New York Medical Journal*, *July* 23, 1898.

24.—HYSTERIA AND EPILEPSY.

By F. Graham Crookshank, M.D. Lond., Assistant Medical Officer, Northampton County Asylum.

[From Dr. Crookshank's paper:]

It is, of course, well known that epileptics often exhibit symptoms of hysteria, and that, in some instances, hysterical attacks may alternate with epileptic fits. Yet, although every text-book gives elaborate tables of the objective differences between epileptic fits and hysterical seizures, little notice is taken of the interesting and important fact that the kind of hysterical seizures likest epilepsy may occur in epileptic patients, and bear to the true epilepsy a relation other than that of mere coincidence. A case in point is that of a lad aged 17, who is at present under my observation. This lad has been subject to epilepsy since the age of 7, and has on several occasions, had

outbursts of epileptic furor. Latterly, even in his periods of docility, he has shown signs of moral obliquity. As a rule his epileptic fits, which are severe and followed by more or less mental confusion, recur at intervals of from two to three weeks. During the day or two immediately succeeding the epileptic fits he generally has several fits which the attendants have come to call his "sham fits." In these "sham fits," which scarcely ever occur unless a medical officer or some person other than the usual ward attendants happens to be near, he never bites his tongue, sustains any injury, or suffers relaxation of his sphincters. These "sham fits" are never heralded by a cry, and are never followed by coma or even sleep. In the fit itself there is no stage of tonic spasm, and the clonic spasms, although general and severe, have that appearance of volitional inception which is so characteristic of hysterical seizures. I have observed in these "sham fits" of his, arching of the back and a tendency to adopt "attitudes" frequently, but conjugate deviation of the eyes and head never. There are no good reasons for supposing this lad to be a malingerer, and the character of these attacks, the "hysterical" anæsthesia that I have found after them, and their occurrence during his times of mental instability, seem to point conclusively to their "hysterical" nature. Such cases as this, besides pointing out the danger of overlooking epilepsy in persons apparently purely hysterical, serve to accentuate our ignorance of what hysteria really is.

Hysteria is not malingering, and the hysterical simulation of disease is purely objective. Nothing but confusion is achieved when hysterical affections are called functional; for hysterical phenomena are frequently (as in disseminated sclerosis) the symptoms of gross nervous lesions, and the term "functional" may, with at least equal justice, be applied to idiopathic epilepsy. And there is the further complication that, as in the case just narrated, hysterical seizures may be sequential to epileptic fits. And, although one has usually little doubt as to whether a particular fit be hysterical or not, the grounds for one's decision cannot always be easily and logically expressed. For there are few, if any, hysterical phenomena which may not be superadded to an epileptic fit; and it is doubtful if there are any characteristics of an epileptic fit which may not sometimes occur in hysteria. Charcot and Marie even hesitated to affirm that, in hysterical convulsions, evacuation of urine and fæces never too place.

That there is in hystero-epilepsy, as in epilepsy, a liberation of energy in so-called "motor" centres is as obvious as that, in both cases, the motor centres involved are those of the highest (re-re-representative) level. But there is this difference: the process of "discharge" and "dissolution" proceeds, in true

epilepsy, till only the bulbar centres are left intact, and leaves behind an "exhaustion" of the affected centres which is not recovered from for an appreciable time. In hystero-epilepsy, on the other hand, the discharge does not commonly involve any very profound exhaustion, and may affect so little of the central nervous system as not to be incompatible with the persistence of consciousness. Again, it is generally assumed that the cause of an epilepsy is some quality, cellular or molecular, of the discharging centres. But we have no right to assume that that is the whole matter in a hystero-epilepsy. For a hystero-epilepsy is, as de la Tourette and Cathelèneau have shown, always accompanied by nutritional and metabolic perversions which cannot be explained as effects of the convulsions.

The case of a man, aged 27, who has suffered from epileptic mania on several occasions, may illustrate another form of the association of hysteria with epilepsy. The mental state of this man is one of weakness, partly, no doubt, from the epilepsy, partly from the mania, and partly from the saturation with bromides that he has undergone. Latterly, it has been noticed that, when his fits are in abeyance, or, as his attendants say, "he wants a fit," his mental condition is "hysterical" rather than insane. When in this hysterical state he frequently alludes to his eyes and his difficulty of vision. He declares that it "helps him" to "fix" his eyes by staring at the gaslight or other bright object. As a matter of fact, he is hypermetropic, and the aura of his fits is usually visual. On many occasions I have found this man, when I have known him to be hysterical, lying on a couch, or the floor, with his body arched, his head thrown back, and his eyes squinting at the tip of his nose, or at his two thumbs held in front of his face. When in this condition, which, if he be not violently disturbed, may persist for hours, he is utterly regardless of all that passes round him, and his limbs are in a state of rigity and exhibit a greater or less degree of *flexibilitis cerea*. If he be spoken to he answers slowly and dreamily. His general sensibility is considerably blunted, though a sharp prick with a pin will sometimes bring about violent clonic spasms. If his head be moved, or his hands taken away, so that parallelism of his optic axes is resumed, he at once becomes fully conscious and answers questions briskly. But if a finger be held up before his face, and brought near his nose, while he is told to follow the finger with his eyes, the cataleptoid state is again established. This cataleptoid state can be quite easily transformed into one of somnambulism, in which he is exceedingly responsive to suggestion. He never, in these cataleptoid and somnambulistic states, makes any spontaneous remark, or initiates any move-

ment. That in these states there is an element of catalepsy is obvious from the tonic spasm and wax-like rigidity; that the catalepsy and "somnambulism" are the corresponding forms of hypnotism is shown by the mode of inception and the responsiveness to suggestion. That the hypnotism is self-induced confirms my opinion of the essentially hysterical nature of the whole series of states; for, as Vizioli has shown, it is in hysteria that auto-hypnosis is met with. Objectively, then, this case is one of auto-hypnosis in a hysterical subject. From another point of view, it appears that the patient is possessed by a fixed idea—namely, that his eyes are the cause of his troubles.—*Practitioner, October*, 1898.

25.—THE CURABILITY OF EPILEPSY.

[The following is a leading article from the *Journal of the American Medical Association*, September 10, 1898:]

Epilepsy, which is commonly treated of as a spinal disease in the text-books, is also there usually considered as a curable one, at least to a certain extent. Practically, however, well-marked cases in adults are commonly estimated as incurable, and there are neurologists who seem disinclined to admit even the small percentage of recoveries that others allow as possible. Dr. Wharton Sinkler, for example, in a recently published paper, appears to take the ground that a suspension of epileptic symptoms for a term of many years is to be considered rather as a remission than a cure; in fact, he apparently considers it hardly justifiable to put down any case as cured. He has collected a series of twenty-four cases altogether, in which the epileptic symptoms failed to reappear for various periods ranging from two to twenty-nine years, including eight cases in which they were lacking from five to nine years, and four cases of even longer intervals. The surprising feature in his figures is that they do not include a larger proportion of cases with the shorter intervals of two and three years, which it would appear ought to be more common than those of the longer periods, and this suggests the possibility that these latter include some of those instances that are not so infrequent after all, when a single epileptic attack, or possibly a series of such occur at a certain time in an individual's life, it may be under some special toxic influence or condition of mental or bodily over-strain, and then fail to recur, perhaps for the remaining period of its existence. Almost every one, it would seem, who has had large experience with epileptics ought to have met with some of these cases, and it is not uncommon even in asylums, where the patients are under close observation, to meet with cases counted

as mild dements in whom an occasional epileptic attack occurs at intervals of several, or possibly a number of years. Such cases are not commonly considered as cases of cured epilepsy, or sometimes are hardly reckoned among the epileptics in the classification of the institution. There are still other cases known to asylum physicians, where epilepsy has passed into chronic insanity, sometimes of the delusional type without any pronounced dementia, and which has continued for many years, indeed through the whole remaining life of the patient without any epileptic symptoms whatever.

When we consider what epilepsy really is, viz., a symptom or a collection of symptoms of cortical irritability or excitability, in all probability dependent upon a very wide range of pathologic conditions, from irreparable organic changes on the one hand to slight vasomotor disturbances from various causes on the other, there seems to be no good *a priori* reason for holding it to be invariably incurable. It would appear, indeed, more reasonable to admit that what is pathologically indistinguishable from epilepsy that undergoes recovery should be classed with epilepsy, and that well-marked cases of the disorder may therefore be counted as curable. The infant's cortex is particularly unstable; it may be irritated to the extent of producing general convulsive phenomena with every symptom of epilepsy in the adult, and yet its recuperative power and developmental possibilities are such that it does not by any means follow that infantile eclampsia implies later epilepsy. They are practically the same thing, and the distinction that is made between them is a purely arbitrary one based on the fact that one is recovered from, while the other, as a rule, is not; there is certainly a logical defect in every argument for the incurability of epilepsy founded upon such a distinction as this. In children past the age of actual infancy the progress of epilepsy is still relatively favourable, and most practitioners of experience with nervous diseases have had cases in such that they felt justified in considering as cured. The more complete the development of the brain, the more serious is the prognosis as a rule in the disorder; it is true that we do not often meet with a cure of so-called idiopathic epilepsy in the adult, and yet it would be unjustifiable to say that it does not sometimes occur. The question is what we shall call a recovery; according to Dr. G. M. Hammond, in the discussion of Dr. Sinkler's paper in the American Neurological Association, a complete absence of epileptic symptoms for the space of three years ought to be reckoned as a cure, and any subsequent recurrence should be considered as another attack from a different cause. There is reason in this, though others might demand a larger interval of freedom from symptoms; it is usually little more rational to

call such an occurrence in epilepsy a remission than it would be to say that the interval between a first and second attack of pneumonia, for example, is a remission. The morbid excitability of the cerebral cortex, of which epilepsy is a manifestation, once allayed, the patient is practically well, and there is no inherent presumption against the permanency of the recovery. If external irritation could be avoided the cures would be more numerous, but the continuance of an even slightly greater susceptibility to excitation than is exactly normal renders a relapse the more possible. In a certain proportion of cases, not a large one, it is true, there undoubtedly is a restoration to an approximately normal condition, and there is reason to think that in a smaller proportion the morbid process may produce an obtunding instead of an aggravation of the excitability, thus tending to dementia or insanity without characteristic epileptic phenomena. In the majority of cases, however, the epileptic symptoms continue in spite of the brain deterioration and the disorder is accounted as incurable.

The proportion of actual cures of epilepsy is small. Dr. Joseph Collins estimates it, however, as high as 5 per cent. under proper and steady treatment. When we take into account the juvenile cases this is probably not too large, and if we include infantile eclampsia in epilepsy, not large enough. Add to these the cases where only one or two attacks occur in a lifetime and the patient survives them many years, even without treatment—and there are many such cases that hardly come under the care of physicians—and the proportion is still further increased.

It is beyond question that there is a risk of too early estimation of cures in epilepsy, but three to five years' freedom from attack ought, it would seem, to justify the counting a case as recovered. Post-operative cures are in fact very commonly reported far within such a length of observation, but they ought to be subject to the same rules as to interval and observation as others, and will not be likely to alter the statistics in the way of making them any more favourable. Organic disease and serious developmental defects are probably responsible for the majority of epilepsies, but there remains a proportion that are probably due to conditions that are themselves not altogether incurable, or are at least amenable to treatment, and in these there is at least a possibility of cure. Still others are due to temporary intoxications or overstrains, and if there be not irreparable damage set up they may even undergo a spontaneous cure which may escape medical observation. The dictum of the incurability of even adult idiopathic epilepsy is, therefore, not fully warranted by observation or based on well-established pathologic facts.

26.—CHOREA.

By Walter F. Boggess, A.B., M.D., Louisville, Ky.

[The following is taken from Dr. Boggess's paper:]

Chorea is distinctly a neurosis of early life. In Stephen Mackenzie's statistics, of 439 cases, 34 per cent. occurred between the ages of five and ten; 43 per cent. between the ages of ten and fifteen; 15 per cent. between the ages of fifteen and twenty; leaving only 8 per cent. occurring before the fifth year and after the twentieth. Sinkler reported two cases occurring after the eightieth year. Those cases which occur after the twentieth year are probably mixed neuroses, occurring with other psychic disturbances amounting to insanity or to dementia. From Mackenzie's tables, the largest number of cases occurred about the thirteenth year. Of my sixteen cases, six or seven occurred between the tenth and fourteenth years—the youngest age two-and-a-half years, the oldest thirty-two years. I have never seen a case in an infant, although Sinkler reports a case of congenital chorea, said to be due to fright of the mother during pregnancy.

All authors agree that sex is an important etiological factor, and that the female sex, owing to lack of development of inhibitory power of motor centres, especially at the beginning of womanhood, is peculiarly liable to the disease. In my cases, fourteen out of the sixteen were females, a higher percentage, however, than Gowers makes, who found 365 boys among 1,000 cases. Heredity, *per se*, plays a minor part in this disease. Climate seems to exercise but very little influence upon this disease, as to heat or cold; but there is an influence exerted by seasons. Doctors Mitchell and Lewis claim that there is a correspondence between the number of attacks and the number of rainy and cloudy days. As to race, I have never seen a case in a negro, although I had ample opportunity for observation while in charge of a large children's clinic composed largely of negro children.

Should I be asked upon what etiological factor I lay most stress, I should unhesitatingly reply the rheumatic diathesis. Upon this point, however, there is a diversity of opinion. Some claim that the frequent occurrence of this diathesis with chorea is only a coincidence, while others admit that an intimate relation exists between these diseases. The majority of recent writers, such as Mackenzie, Bouchard, Gowers, Osler, Sachs, Maclangen, and others, hold the latter view. I take it that no one doubts the constitutionality of rheumatism or the hereditary transmission of the same. The choreic symptoms are not due to prior heart troubles (the so-called embolic theory), but result

directly from the disturbing action of the vitiated blood upon the nervous centres. As Mackenzie tritely sums the whole matter up :—"Rheumatism is essentially a disease of the motor apparatus, chorea is essentially a disease of the motor centres."

The question now remains, granting that such a relationship exists, how is chorea induced, what is its exciting cause? The motor centres, like all other parts of the nervous system, are more susceptible to disturbances in the female than in the male, and in the young than in the old. While it is not necessary for the patient to have had rheumatism, a rheumatic diathesis is sufficient for some fright, some nervous shock, some gastric or uterine trouble to set up a chorea, to excite the motor centres, the heart's condition being only an accident or an accompanying symptom, an exciting cause but not essential to the production of chorea. The motor centres are most easily disturbed in people of a rheumatic constitution, because rheumatism is a disease of the parts of the body over which the motor centres preside. In my table, two of the sixteen cases followed scarlet fever. It is a well-known fact that a frequent complication of scarlet fever is rheumatism. [The table is omitted here.] In all these cases there is abundant evidence of a rheumatic diathesis; and in one case the father had asthma, which is, according to Haig, a rheumatic manifestation.

Pathology.—In treating of this subject, as chorea is a functional disturbance of the motor centres, we find the same difficulties that we encounter in the pathology of epilepsy; yet we often find in both diseases evidences of actual cerebral disease. In post-mortems upon epileptics, we often failed to find gross cerebral disease when we thought it was present, and *vice versa*. So it is with chorea. See collected eighty-four cases of chorea upon which post-mortems had been made; in sixteen no changes in normal structure were found; in thirty-two there were lesions of the brain and nerve centres; in the remainder there was congestion of serous membranes. After all the various theories as to the pathology and the various post-mortem findings are summed up by Sachs in this statement :—"The only just inference from all this (the various theories) is that the accurate pathology and morbid anatomy of chorea are still unknown. All that we can claim is that in the majority of cases there is considerable change in the gray-matter of the central nervous system, in the motor centres, and in the cortex. . . . The tendency of the present day appears to regard chorea as due primarily to vascular changes, and such vascular changes may be the result of infection.

Prognosis.—Complete recovery is the rule.

Treatment.—Mild cases demand but little treatment, but severe cases may try the skill, tact, and patience of the physician.

The first step of importance is absolute rest. In chorea this is essential, but often difficult to carry out. The duty of the physician is to impress this fact upon the mother in the most emphatic manner. After the first few days it is a very easy matter to keep the child in bed. Next in importance to rest is a nutritious and easily digested diet. Baths are also of importance to soothe a restless child and make the skin active. As to medicinal treatment, arsenic, iron, iodide of potassium, manganese, and tonics are recommended. Among them arsenic holds the lead. To get the proper effect from arsenic, it must be pushed to its full physiological limit, varying from three to twelve drops three times per day. These patients can sometimes take enormous doses of the drug. Doctor Seguin insists that eighteen to twenty-seven drops of Fowler's solution, three times a day, constitutes the proper dose; but my experience is that few can take such large doses. Looking at the disease from a rheumatic standpoint, how does arsenic benefit these cases? Arsenic acts, as do all so-called alteratives, in modifying the nutritive processes of the body. The clinical pathologist cannot combat the empirical results of the clinical therapeutist. Arsenic does influence nutrition. Rheumatism is largely a disease of mal-nutrition, hence any remedy that regulates nutritive processes relieves rheumatism. In many forms of rheumatism arsenic has been proven of great value in the same way as iodide of potassium. Salicylic acid and the salicylates are used sometimes with good effect, but they soon disorder digestion. My treatment consists in giving iron, arsenic, manganese, and strychnine in full doses; salicylates occasionally; and to quiet these patients I use one-quarter grain codeia with three to five grains of antikamnia.—*Pediatrics, September* 1, 1898.

27.—THE TREATMENT OF INTRACRANIAL TUMOURS.

By David Ferrier, M.D., F.R.S., F.R.C.P.

[The following is taken from Dr. Ferrier's paper in introducing this subject for discussion in the Neurological Section at the Edinburgh meeting of the British Medical Association:]

It has seemed to me that more reliable conclusions as to the results of operation for cerebral tumour might be arrived at by examination of the records of cases under the care of myself and colleagues at the National Hospital for the Paralysed and Epileptic, where we have the advantage of the surgical skill of Messrs. Horsley and Ballance, the former of whom has

deservedly gained a world-wide reputation in this department of surgery. The records have been examined and analysed for me by our Registrar, Dr. Whiting. The total number of cases recorded within the last ten years is 38—namely, 31 cerebral and 7 cerebellar tumours. In 20 of these—namely, 16 cerebral and 4 cerebellar—the tumour was removed wholly or partially; while in 18—namely, 15 cerebral and 3 cerebellar—the tumour was not removed. Of those removed, 3—namely, 2 cerebral and 1 cerebellar, that is, 15 per cent.—died within a few hours or days. Seven—namely, 6 cerebral and 1 cerebellar—died after some weeks or months, that is, 35 per cent. One of these lived five weeks; another six weeks; another three months; another six months; another nine months; another ten months. In 4—that is, 3 cerebral and 1 cerebellar—the patients lived some weeks or months, but the after-history is uncertain, that is, 20 per cent. Six—namely, 5 cerebral and 1 cerebellar—lived a year or more. One is alive after one and three-quarter years; 1 lived two years and died of an accident; 1 lived two years; another four years or more; and another is alive four years after the operation. This gives a percentage of 30 recoveries in the cases in which the operation was completely carried out. In the 18 cases in which the operation consisted merely in exposing or exposing and incising the tumour, 4 cerebral cases died within a few hours or days, that is, 22·2 per cent. Seven cerebral and 1 cerebellar died within the year, the longest survival being eleven months. This gives a percentage of 44·4. In 3 cerebral cases the results were uncertain. One lived at least five months, another nine months, and a third is still alive and going about (the operation was performed only two months ago), that is, 16·6 per cent. Three—namely, 1 cerebral and 2 cerebellar cases lived a year or more. One lived one and a half years, and of the 2 cerebellar cases one is alive after one and a half years, another after six and a half years. This gives a percentage of 16·6 of complete recovery.

The total immediate mortality, therefore, of all operations for the removal of cerebral tumour amounts only to 18 per cent. Against this we have in those cases actually operated on and not merely examined, 30 per cent. of complete, and, in round numbers, 50 per cent. of partial, recoveries. As regards the degree of recovery, some idea may be gained by a few particulars as to the after-history of some of the patients we have been able to trace or communicate with:—

The first man in question was a patient of mine some ten years ago. From an enormous hole in the left side of the head, measuring some $4\frac{1}{4}$ by $2\frac{1}{2}$ inches, a large infiltrating sarcoma, several ounces in weight, and several cubic inches in size,

was removed by Mr. Horsley. The patient made an excellent recovery, and, with only a slight addition to the hemiplegia from which he suffered before the operation, he continued in good health and spirits for two years. He was looked upon as a marvel in the little country town in which he lived, and was accordingly frequently invited to relate his wonderful experiences, and much treated in consequence. This had no very beneficial influence on him, as may be imagined, and one night he fell down a stone staircase on going up to bed and fractured his skull, of which he died. It was satisfactory to know that this was not the result of his disease, whad had been completely extirpated and showed no signs of recurrence.

The next relates to a boy under the care of Dr. Beevor, from whose right cerebellar lobe a cyst (sarcomatous?) was removed by Mr. Horsley two years ago. His headache disappeared, his optic neuritis subsided, and he is still alive and well. Another patient whose cerebellum was incised, but whose tumour was not found, writes after six years:—

"I am pleased to tell you that, with care, my health is quite satisfactory. I still have the swelling at the side of my head, but it causes no inconvenience except being rather sensitive to touch. I also still have the weakness down the right side, but this is much better than before I left the hospital. Indeed, it will give you an idea how much better I am when I tell you I have been able to cycle for two seasons."

Another patient had an enormous tumour removed from his right hemisphere. He was already comatose at the time of the operation, but regained consciousness, and recovered so far as to be able to leave the hospital and transact business. Unfortunately the tumour recurred in some months and caused his death, yet for the time he was practically as one rescued from the grave.

I think that the facts which I have brought forward are sufficient to prove that cerebral surgery in the case of intracranial tumours, as well as in the other forms of cerebral disease to which I have already alluded, has been a beneficent extension of the healing art. There is indeed a large mortality, but the immediate mortality compares favourably with that of many of the other major operations of surgery. Thus, according to Treves's *Surgery*, the mortality after gastrostomy is 30 per cent.; gastro-enterostomy, 35 to 55 per cent.; nephrolithotomy, 43 per cent.; nephrectomy, 40 per cent.; strangulated hernia, 30 per cent. And it is estimated that only 30 per cent. of patients operated on for cancer of the breast remain free from recurrence. The immediate cause of death has been for the most part shock, hemorrhage, or septic inflammation, which occasionally occurs even in the most skilful hands, but which should be entirely

preventable. And it is possible that the risks from shock may be lessened if, as Mr. Horsley advocates, the operation should not be completely carried out at one sitting. I am inclined to think that in some at least of the fatal cases of operation for cerebral tumour death cannot be directly attributed to the operation, for the mortality, even where no attempt has been made to remove the tumour, appears to be larger than that from simple trephining for other forms of disease. It is the fact that in cerebral tumours where all seems to be going on as usual, sudden death is apt to occur; and a coincidence of this kind, on or after removal of the patient from the operating table, would be apt to swell the mortality.—*British Medical Journal, October* 1, 1898.

28.—THE CRANIAL "CRACKED POT" SOUND AS A SYMPTOM OF CEREBELLAR TUMOURS.

By Norman Bruce Carson, M.D., of St. Louis.

[Dr. Carson first gives details of four cases, all fatal. In the first case, death occurred fourteen days after trephining and tapping the ventricles, and the second died two hours after trephining. The other two were not operated upon, but the diagnosis was confirmed by the necropsy in one case, whereas the other case was lost sight of.]

We have here four cases of cerebellar tumours diagnosed, in three of which the diagnosis was confirmed by post-mortem, in which this cracked-pot sound was present. This sound is due to a separation of the sutures, and therefore is not evident, except in those cases where the sutures are not widely separated. It is on that account apparent only in cases where the sutures have been united and again separated by pressure from within, as in cases of acquired hydrocephalus, and never in the congenital form. The only other condition wherein I have found this sound present is in extensive linear fractures of the skull. The cranial cracked-pot sound must not be mistaken for the high-pitched sounds present in some cases of brain tumours, as it is not a high-pitched sound, but the clear, distinct, cracked sound produced by striking a cracked pitcher or iron pot, and is best made by percussing the cranial bones with the finger instead of with a plexímeter. It is not necessarily a sound of childhood either, but may be present at any period after the sutures have become firmly united. Dr. L. Bremer recently showed me the skull of an adult patient who had been the subject of a cerebellar tumour, causing hydrocephalus, in which the separations of the sutures caused by the internal pressure were

beautifully demonstrated, and showing conclusively that this separation may take place in adults as well as in young persons. In this case the cracked-pot sound was not made out before death, because it was not sought. I have no doubt, however, from the condition of the sutures that it was present.

Gowers says the separation of the sutures does not involve such great force as may be supposed, for the reason given by Hale White,—namely, that tumours of the brain cause a remarkable thinning of the cranial bones. This applies especially to cerebellar tumours, and that on this account a very slight force only is needed to produce a separation of the sutures. From this we may conclude that a very slight pressure from within might produce a separation of the sutures and the production of the cracked-pot sound comparatively early in the disease, especially in the case of children, who, as we all know, are often the subjects of cerebellar tumours. In an analysis of 49 cases of cerebellar tumours, I found mention made of the presence of hydrocephalus in 22 of them, so that with hydrocephalus present in such a large percentage of these cases, this sound must be an important symptom, as my researches lead me to the conclusion that it is to be detected in all cases where the ventricular effusion is sufficient to exert actual pressure.

That hydrocephalus is not always easily diagnosed is evident from the number of cases reported in which its presence was not discovered until the post-mortem. Roswell Parke says, "The diagnosis of hydrocephalus can only be positively made when the shape of the skull is changed to accommodate the increase of the fluid within." In two of the cases mentioned above there was no apparent increase in the size of the head, yet the presence of this sound indicated the pressure from within. So that with this sound present I think we can surely diagnose hydrocephalus, and with the other symptoms of brain tumour we can locate it either in the cerebellum or in the neighbourhood of the corpora quadrigemina. In an examination of the literature I find mention made of the cranial cracked-pot sound but twice, once by Keen, where he refers to it as a symptom in cases of acquired hydrocephalus; again by Hall, who mentions its presence in a case of cerebellar tumour causing hydrocephalus. From this I am led to the conclusion that this symptom, which I think one of considerable importance, has been overlooked, as it seems to me that if it had been noticed, reference to it would certainly be more frequent.

Since my return from New Orleans I find in a work, "Die Geschwülste des Nervensystems," von Dr. Ludwig Bruns, Berlin, 1897, mention is made of the cracked-pot sound in cerebellar tumours. He says he does not consider this sound as pathognomonic of cerebellar tumours. He further says that he

considers it pathognomonic only of a local or general thinning of the cranial bones, which naturally does not occur alone in tumours, and is therefore not apt to have any pathological significance before the third year, or before the complete closure of the fontanelles. Besides, he finds it in hydrocephalus and acute tubercular meningitis.

Macewan, "Diseases of the Brain and Spinal Cord," says he has met with this sound in three cases of extensive fractures of the cranium. With the statement that this sound is not pathognomonic of tumours, I have had many opportunities of demonstrating, not only in cases of acquired hydrocephalus from other causes than tumours (indeed, I see almost daily at present a case of hydrocephalus, not due to tumour, in which the bruit de pot félé is present), but also in cases of fractures of the skull. Nevertheless, I do hold that with other symptoms of tumour present it is not only an important factor in the diagnosis, but in the localisation as well. With the statement that it has no pathological significance before the third year or before the complete closure of the fontanelles, I also fully agree, as I have never been able to produce the sound from the heads of healthy children either before or after the age of three years, nor have I been able to get it from any of the several cases of congenital hydrocephalus that I have examined.—*The Annals of Surgery, September*, 1898.

29.—REPORT OF A CASE OF EPIDEMIC CEREBRO-SPINAL MENINGITIS WITH RECOVERY FOLLOWING LUMBAR PUNCTURE.

By Peter Bassoe, M.D.,
Interne in the service of Prof. Geo. F. Butler, Cook County Hospital, Chicago, Ill.

In the *Journal of the American Medical Association* for July 2, Dr. J. B. Herrick reports a case of cerebro-spinal meningitis, in the post-mortem of which the diplococcus intracellularis meningitis of Weichselbaum was demonstrated in the meningeal exudate. From this fact, and from the large number of cases of meningitis recently observed in Chicago, the Doctor concludes that we have to deal with a mild epidemic, although the micro-organism had never been demonstrated before, probably because a bacteriologic examination has been made in but very few cases. The following case further proves the existence of genuine epidemic meningitis in Chicago at the present time:—The patient, a Russian labourer, 45 years old, previously in good

health, was admitted to treatment under Prof. Geo. F. Butler in the Cook County Hospital, June 17, 1898. Five days before admission he had been suddenly taken with vomiting and diarrhœa, followed by severe headache, backache, and pain in the extremities. An outside physician sent him to the hospital with the diagnosis of trichiniosis. When first seen at the hospital he complained of severe headache; mind was very dull; patient constantly stroked his head and neck with his hands, and groaned; great tenderness on pressure; pupils contracted and equal, reacted normally; no ocular or other paralysis; pulse regular, full and soft, 48 beats to the minute; temperature 98, respiration 28; no eruption; examination of chest, abdomen, and extremities absolutely negative. The night following admission he was in a continuous pain and stupor; very restless; slept a little under the influence of morphine. The pulse remained slow, 52-64, and the temperature on the day following ranged between 100 and 101 degrees. The bowels were moved by cathartics. During the following days the pulse remained slow, while temperature on June 22 reached 103 degrees, with a pulse of 68. Headache and mild delirium continued. No new symptoms were observed, except a slight right-sided, facial paresis. An ophthalmoscopic examination on June 22 showed no change in the fundus; there was a marked cupping of the disc on the right side. The delirium became more marked and continuous; headache and tenderness, with rigidity of the neck, persisted; but under the influence of bromides or morphine the patient slept four to six hours during the night. The pulse increased in frequency; on June 25 it ranged from 100 to 120, temperature 100—102·4 degrees. The diagnosis of meningitis having been made, and in order to ascertain the kind of micro-organism present a lumbar puncture was made on June 26. A fine needle was introduced between the second and third lumbar vertebræ, one-half inch from the median line, the cerebro-spinal fluid escaping drop by drop, each drop being distinctly cloudy; 20 c.c. were withdrawn. No change was noticed in the patient's condition during the removal of the fluid. On centrifugalising the fluid a whitish sediment was obtained, consisting almost exclusively of pus cells, most of them greatly disintegrated. No micro-organisms were seen in or around the cells. Nine human blood serum tubes were inoculated, and on seven no growth appeared. In thirty-six hours minute drop-like cultures were observed on the two remaining tubes, which under the microscope were seen to be pure cultures of a diplococcus, with occasional titiads. It proved to be the diplococcus intracellularis meningitis of Weichselbaum, and did not stain by Gram's method. On the day of the puncture the patient's temperature ranged between 99·6 and 100·6; pulse

96—100. The night following he rested better than any night previous, and seemed rational in the morning. The temperature next day was 97—99·6; pulse 92—100. Since then the headache, tenderness and rigidity of the neck, and restlessness rapidly have disappeared. On June 28 maximum temperature was 99·2; on June 29, 98·8; on June 30 it reached 101, but has been normal ever since. On June 27 ophthalmoscopic examination revealed a slight optic neuritis on the right side; only one-fourth of the border of the disc could be made out. On June 29 this was more marked, and present to a less degree in the left eye. On July 2 the optic neuritis was greatly lessened, margins of both discs being distinct. June 28 and the two days following there was urinary retention, so that patient had to be catheterised. July 2 the patient sat up, had a good appetite and no headache. Since then he has been rapidly gaining in strength, and seems to have made a complete recovery.

This case adds another to the number recently reported which go to prove that lumbar puncture not only enables us to make, *intra vitam*, a bacteriological diagnosis of the different varieties of meningitis, but also that it is the only therapeutic agent which is of more than a palliative value in the treatment of the disease.—*Journal American Medical Association, July* 23, 1898.

30.—INFANTILE PARALYSIS.

By Thomas Buzzard, M.D., F.R.C.P., Physician to the National Hospital for the Paralysed and Epileptic, London.

[Dr. Buzzard adduces the following clinical evidence in favour of the infective origin of this disease, in his address on microbes and nervous disease, at the British Medical Association meeting in Edinburgh, 1898:]

In view of the very varying conditions as regards wound, or receptive surface, identification of bacillus, and presence of toxin, it is evident that we may well be prepared to meet with examples of disease in which there is no evidence of breach of continuity, and no microbe can be perceived, whilst the existence of a toxin is only to be inferred from the clinical symptoms. I cannot help thinking that infantile paralysis is a case in point. There is a growing impression, in which I strongly share, that this disease may be the result of infection, though how this is usually introduced there is no evidence to show. Even if infantile paralysis were always sporadic, that circumstance would not be an argument against its infective origin. It is doubtless exceptional to meet with more than one case of infantile

paralysis in a household or district. But putting aside the evidence afforded by the occurrence of large epidemics, it is possible that the exception is not quite so marked as at first sight would appear. In my own limited experience during the last three years I have met with examples which appear to point to coincidence of seizure :—(1) A boy was attacked with fever, headache, and drowsiness, followed by characteristic atrophic paralysis in one arm. Two days before his seizure a sister suffered from fever, headache, and drowsiness, sleeping almost constantly for two days, and then recovering without paralytic symptoms. (2) A girl was attacked with headache, vomiting, and fever, resulting in atrophic paralysis of one lower extremity. On the day previous to this attack her sister was affected with similar symptoms, which passed off without paralysis. A fortnight previously a child living in the immediate neighbourhood was similarly attacked, with resulting paralysis in both legs. (3) Two sisters were under my care in hospital last spring who were seized with infantile paralysis within six days of each other, and two other children in an adjoining street were similarly attacked in the same week, and were left paralysed in the legs. Whilst writing this I received from Mr. Holden, of Bellerive, Tasmania, notes of an interesting example of a small epidemic, by which three children were left crippled (each in one leg). The place was a seacoast village. This account, although imperfect from lack of technical details, certainly points, I think, to cases of poliomyelitis. Dr. C. S. Caverly also has been kind enough to send me notes of an epidemic of acute anterior poliomyelitis which prevailed in the state of Vermont, U.S.A., chiefly in a single valley, during the summer of 1894.

In a recent lecture I referred to the epidemics described by Medin and W. Pasteur, and also to a case under my colleague, Dr. Bastian, in which an attack of acute anterior poliomyelitis followed a wound upon the knee, to staunch the bleeding of which moss from the roadside had been used. It is very uncommon in my experience for this disease to be preceded by a recognised wound of the skin; the sequence is probably as exceptional as is the occurrence of tetanus without a preceding wound. It would be important to learn whether cases of the kind are more frequent than is supposed.

In the epidemics observed by Medin, Pasteur, and Caverly, although the brunt of the attack appeared to fall upon the anterior horns of the cord, there was also evidence of more remote portions of the cerebro-spinal axis being either exclusively or concurrently affected. In some of Medin's cases post-mortem examination showed lesions of the bulb, antero-lateral columns, peripheral nerves, and cerebral cortex. Amongst the cases described by Dr. Pasteur, a boy had primary fever, followed on

the fifth day by flaccid paralysis of the entire left upper limb. In another primary fever was followed by right hemiplegia with rigidity, and transient paralysis of the right side of the face and palate. A girl had primary fever, followed on the fifth day by paralysis with rigidity of the left lower limb. A boy had primary fever followed by general tremors lasting a few days. A girl had primary fever followed by partial tremors lasting a few days, and strabismus of short duration. In two other members of the family primary fever took place, but was not followed by paralysis. There can be, I think, little doubt that in view especially of the experience afforded by epidemics, we shall have to look upon infantile paralysis as the result of an infective agent which, whilst its dominant influence is exerted upon the large ganglionic cells in the anterior horns, may affect many other portions of the cerebro-spinal axis. The term "anterior acute poliomyelitis" would seem to be too narrow a designation of this disease.

So far as I am aware, no bacteria have been found in these cases, but opportunities for examination in the acute stage are rare. Goldscheider searched for them without success in a very early case. The experiments of Thoinot, who injected preparations of the B. coli communis and staphylococcus, and produced spinal lesions, the peripheral nerves remaining intact, are of interest in this connection. Marked vascular changes were associated with the influence of the toxin upon the neuron.—*British Medical Journal, October* 1, 1898.

31.—TYPEWRITER'S CRAMP.

By Dr. F. Hampson Simpson.

Dr. Simpson (*Birmingham Medical Review*, March, 1898) records the following case of typewriter's cramp, consecutive to writer's cramp and other occupation neuroses:—G. J——, aged 33, correspondent clerk, is a man of good physique, but, according to his own statement, of a somewhat nervous temperament. He has been troubled from time to time during the past ten years with dyspeptic symptoms. In 1891 he contracted syphilis. He has no recollection of any other definite illness. He married in 1895, and has a healthy child. His family history is apparently excellent. At the age of 18 he obtained a situation as clerk with a London firm. In this capacity he wrote on an average for seven to eight hours daily. In March, 1889 (*i.e.*, after about seven years of this work), he began to suffer from a crampy feeling in, and tendency to spasmodic fixation of, the right little finger. In three months

all the fingers of the hand were invaded by the spasm, and the act of writing was seriously impaired. He was sent by his firm to the Paris Exhibition of 1889, where he had little writing to do, and there he learnt to use the typewriter. When he returned to London six months later he employed this machine for all his correspondence. Occasional attempts to write, however, showed that the severity of his neurosis was in no way abated by the rest. About this time (1890) he learnt to play the harp, but in a few months he noticed that after practising for an hour or so his right arm became heavy and weary. Subsequently he developed an actual cramp affecting the right hand generally, and more especially the first and third fingers. By the end of 1890 he was obliged to give up harp-playing. In 1892 he experienced similar spasms while playing the guitar, an instrument with which he had been familiar for ten years. From 1893 to 1895 he acted as interpreter on a transatlantic steamer; during 1896 he did little work. In January, 1897, he entered an office as typewriter, working for only two or three hours daily on the machine. At the end of February, towards the close of a day's typing, his right index finger became bent by cramp. From this time onward a repetition of this spasm occurred each evening, a slight involuntary flexion at the wrist being superadded. In less than a month from the onset, exaggeration of the spasm, and the concomitant feeling of strain and fatigue, led him to substitute the middle for the index-finger. Six or seven days later that finger also became the seat of spasm. The patient then sought advice at the Salpêtrière in the clinique of Professor Raymond, where he came under Dr. Simpson's observation.

After describing the cramp induced by the act of writing, the author goes on to deal with that provoked by the use of the typewriter. The patient employed a No. 5 Remington. He had not troubled to learn the proper fingering, and used only the index-finger of each hand, thus not only increasing the work of the fingers, but rendering it practically continuous instead of intermittent. No effect has been produced on the left hand; in the right the cramp was of the nature of an involuntary exaggeration of the normal movement. After two or three hours' typing, the index (or the middle finger since its substitution) became fatigued, and to the flexion of the finger and wrist incident to striking the keys was added a spasmodic contraction which overflexed these parts. This cramp did not appear, however, to seriously impair the precision of his touch; it did not make him miss keys, nor cause the pressure on the keys to be unduly prolonged. In specimens of his work the imprints were fairly equable, and there was no piercing of the paper at punctuation marks by too heavy touch.

As regards other specialised movements, the patient occasionally cut himself when shaving the left side of his face, as a result of his right arm becoming stiff and rigid. The grip of the right hand was more powerful than the left. No weakness or wasting of any particular muscles could be detected. There were no sensory symptoms. At Dr. Simpson's suggestion the patient employed a small hammer for striking the keys. This afforded him much benefit for a time, but the cramp now affects the whole forearm, and he intends to abandon his present occupation. *Medical Age, August* 25, 1898.

DISEASES OF THE ORGANS OF CIRCULATION.

32.—HEMORRHAGIC PERICARDITIS DUE TO THE PNEUMOCOCCUS: ASPIRATION—RECOVERY.

By George G. Sears, M.D., Instructor in Clinical Medicine, Harvard Medical School.

[The details of the case have been mostly omitted here.]

S. B., 23 years old, was admitted to the City Hospital, June 19, 1897, suffering from acute rheumatism. Later the area of præcordial dulness gradually increased laterally, until it extended fully two inches to the right of the sternal border and on the left merged into the dulness of the left lung. On July 11, in the presence of a pneumonia on the left side and of a pleurisy on the right, with a high and irregular temperature a pulse-rate between 110 and 120 and respirations between 40 and 56, it was decided to attempt to give some relief to the patient by aspirating the pericardium, which was done in the fourth interspace, about one inch from the right border of the sternum. A hollow needle was introduced and ten ounces of fluid withdrawn, which Dr. Leary reported as containing much blood, numerous polynuclear and mononuclear cells with an occasional endothelial cell, the polynuclear being frequently arranged in clumps. A culture showed a growth of pure pneumococci. The patient gradually improved and was discharged September 14.

The presence of blood in a pericardial exudate has been generally credited as being a symptom of very grave import from its frequent association with severe underlying conditions, of which the most common are tuberculosis and cancer. So long as our knowledge of the contents of the pericardial sac was chiefly obtained at the autopsy, such a conclusion was necessary, but with a growing acceptance of the view, which Roberts and West have done much to popularise, that aspiration is a reasonably safe procedure and often of great therapeutic value, considerable evidence is now at hand on which to base an estimate of how far the presence of blood itself should have

a determining influence in prognosis. Cases of recovery under such circumstances do not seem to be relatively so rare, as I have been able to find eleven in literature, where the fluid withdrawn was described as varying from bloody to apparently pure blood. Several others have been excluded where death ensued some months later either from the further progress of the original disease, to which the pericarditis was secondary, or as the result of pericardial adhesions. These eleven cases are not, to be sure, a very large number, and yet they amount to a very considerable proportion of the cases of paracentesis pericardii reported, since they do not greatly exceed a hundred all told, and in several of these it was impossible to ascertain the character of the exudate from an inability to find the original reference. They would also make a very good showing when compared with the number of fatal cases with a hemorrhagic character diagnosed before death, but when dealing with such small numbers the statistical method can lead to no definite conclusions. Of these eleven cases six occurred during the course of scurvy, five being reported previous to 1854, three were rheumatic and one was associated with exophthalmic goitre. One was apparently idiopathic, occurring in a very alcoholic subject. The case reported is the only one which I have been able to find where a bacteriological examination was made, nearly all the others occurring in pre-bacteriological days, but the close similarity of the pericardium and pleura make it very probable that further examinations will give positive proof that other bacteria than the tubercle bacillus are capable of producing a hemorrhagic pericarditis as well as a hemorrhagic pleurisy. At all events, these cases raise the question whether Osler's statement that the presence of a bloody exudate on aspiration is decidedly in favour of tuberculosis, may not require a little shading. Even in tubercular cases, where the process is localised, recovery is by no means impossible, if it be proper to speak of a patient as cured, when a pathological condition almost of necessity remains, which is liable to produce a chain of symptoms which may terminate in death, since, as has already been said, a number of cases are recorded, some of which were hemorrhagic, where the tubercle bacillus was undoubtedly the cause, and yet at the autopsy, several months later, the local process had healed through the obliteration of the sac, the fatal issue having been due either to the further progress of the disease in other organs or to the effects of the pericardial adhesions. These same bacteria are now recognised as the most frequent causes of idiopathic inflammations of the pleura, and from analogy it is probable that they are equally active as factors in idiopathic inflammations of the pericardium, though from the rarity of the latter this is less

susceptible of proof. This view is supported by the discovery of their presence by Eichorst in eight cases of pericarditis of spontaneous origin out of twenty-seven, and is unhesitatingly endorsed by him both as to the pericardium and the peritoneum. As a corollary to this the question arises whether, if in tubercular pleurisy, recovery is so frequent as to be practically the rule, it may not also occur when the pericardium is attacked, a question, which in the opinion of the writer, deserves an affirmative answer. The selection of the fourth right space in this case was certainly justified by the result, and while a study of successful cases shows that the fifth space, more frequently the left than the right, was more often chosen than any other, equally successful results were obtained when the needle was inserted in other, occasionally extraordinary, situations. In two cases aspiration was done through the back near the angle of the scapula, while in a case with which the writer was connected, fluid was obtained with the needle introduced below the right costal border nearly in the mammillary line, the accumulation being so great that the diaphragm and liver were greatly displaced downwards.—*Boston Medical and Surgical Journal, September* 22, 1898.

33.—THE CLINICAL SIGNIFICANCE OF REDUPLICATION OF THE HEART-SOUNDS.

By Henry Sewall, Ph. D., M.D.,
Visiting Physician to St. Luke's and Arapahoe County Hospitals, Denver, &c.

[All but the conclusion based on Dr. Sewall's personal observations are omitted here.]

The general fact that the two sounds of the heart may, either one or both, be heard as double sounds, is referred to in all works upon physical diagnosis, but there is little harmony in the various interpretations of the phenomena of reduplication of the sounds of the heart. The scientific character of those who have already investigated this subject is sufficient evidence of its importance, and the unsatisfactory condition of our present knowledge is reason enough why further effort should be made to explain our clinical facts.

Reduplication of the first sound of the heart is a frequent phenomenon, especially in pathological conditions. It may have every degree of completeness from mere prolongation of the first sound to distinct doubling of the same. The condition is most marked at the end of expiration. Reduplications of the

first sound may have various causes, but may be grouped under two heads, as real or simulated. Under the first division fall those reduplications of the first sound due to asynchronism in the contraction of the ventricles. There is also reason for the suspicion that reduplication may have its origin in a double systolic effort of the ventricles. Simulated reduplication of the first sound is probably frequently caused by undue lack of synchronism between the contraction of the ventricle and the tension sound of the corresponding auriculo-ventricular valve. Simulated reduplication may arise from a post-systolic blow of the pulmonary artery against the chest-wall. Simulated reduplication of the first sound may be due to audibility of the auricular contraction. No doubt other physiological or adventitious conditions may cause apparent doubling of the first sound. The prominent factor in causing real reduplication of the first sound is intra- and extra-ventricular blood-pressure. As a rule, that ventricle contracts first within which the diastolic blood-pressure is relatively increased. When reduplication of the first sound is perceived in normal subjects, it often indicates a lack of cardiac co-ordination, which provokes special symptoms referable to the circulation. True reduplication of the second sound of the heart is produced by asynchronous tension of the two sets of sigmoid valves. The phenomenon is a normal one, the aortic valve tension preceding the pulmonary at the end of inspiration and beginning of expiration. The splitting of the second sound may be wholly absent or only perceptible at about the end of inspiration, or reduplication may be represented by a double sound throughout the respiratory cycle. The widest reduplication of the second sound occurs when the ventricles are asynchronous in action. When the right ventricle slightly precedes the left the second sound is single, and, conversely, when the second sound is single the contraction of the ventricles is usually asynchronous. When the first sound is single the character of the second sound as regards reduplication depends upon the ratio of pulmonic to systemic arterial blood-pressure. The greater the difference between these pressures the more marked the reduplication, and *vice versa*. Therefore, when the lung vessels are congested or resistance to outflow from them is increased, reduplication of the second sound is diminished or absent. At the beginning of fevers a single second accompanied by a double first sound has been found; the reverse condition follows as convalescence is reached. True reduplication of the second sound is heard most plainly at the base of the heart under the second and third left costal cartilages bordering upon the sternum. Position of the body and especially respiratory movement influence reduplication of the second sound, in so far as they influence the ratio of pulmonic to systemic arterial

pressure. There is reason to believe that the maximum difference between aortic and pulmonary arterial pressures is rhythmically reached at the end of inspiration and the beginning of expiration—that is, in the phase of respiration in which the splitting of the second sound is most marked. We are probably now in possession of sufficient physiological data to make the estimate of the conditions involving reduplication of the heart-sounds of considerable clinical value. — *American Journal of the Medical Sciences, June and July*, 1898.

34.—PROGNOSIS IN HEART DISEASE, ESPECIALLY WITH REGARD TO LIFE INSURANCE.

By Dr. C. Theodore Williams, of London.

The author (*Medical Examiner*, July, 1898) sums up a most valuable paper on the "Influence of Heart Disease on Life Assurance" as follows:—In considering the question of acceptance or rejection of applicants affected with heart disease, due regard must be had to the following points:—(1) Age, both present and at time of attack.—Cardiac lesions that appear at 20 are more likely to improve than those coming on after 40, and the greater the age of a candidate, the less probability there is of complete compensation. (2) Sex.—Women are less liable to aortic valvular disease than men. Men are less subject to mitral valvular disease. (3) Occupation and surroundings.—Whether these are the same as those under which the cardiac disease was contracted, and whether they are likely to be temporary or permanent. (4) Habits, such as the presence or absence of alcoholism, excess of tobacco-smoking, or the use of certain drugs. (5) Origin of the cardiac disease, whether in endocarditis or pericarditis, or as the result of degenerative processes. (6) The nature of the lesion, and specially whether it is progressive or stationary. (7) The amount of compensation established to overcome the difficulties of the circulation.

Careful study of the histories of persons affected by the various heart lesions has shown that a longer life is compatible with the existence of many of them than was formerly held, yet in the absence of large records it is impossible to reduce the probabilities in all cases to definite figures, and the subjoined conclusions can only be regarded as approximations to assist the medical examiner in his work, which must, after all, be directed to the circumstances of the candidate under examination and to his surroundings and outlook. (1) Cases of adherent pericardium, provided there are no valvular lesions, that the muscular walls are sound, and that there is no cardiac dilatation;

also that the adhesions are not to the chest wall itself, may be accepted with a moderate addition of from three to five years. (2) Mitral regurgitation cases, where the origin is not degenerative and the compensation good, and where there are no dyspnœa and complications, can be accepted with an addition of from five to ten years, according to the age of the candidate. (3) Cases of mitral stenosis are less favourable, being liable to cerebral embolism, and can only be accepted if the disease is not progressive, if there is no accentuation of the second sound, no enlargement of the right side from either dilatation or hypertrophy, and no dyspnœa. They can then be accepted on less favourable terms than cases of mitral regurgitation. Double mitral lesions, however, can only be considered with very large additions. (4) Aortic valvular disease, whether regurgitant or obstructive, can not, as a rule, be admitted into the category of assurable lives; though favourable instances, where the lesions originate in rheumatic endocarditis and the compensation is complete, have been occasionally accepted with large extras. (5) Cases of cardiac dilatation, without compensation, can not, as a rule, be accepted at all, except when the dilatation is of a temporary nature, such as may follow over-exertion and over-smoking, but even here the case can not be considered until all dilatation has subsided. (6) Cases of cardiac hypertrophy must be estimated with reference to the modes of causation, and no definite rule can be laid down, though lives where the lesion giving rise to the hypertrophy is not progressive, the muscular wall in a sound condition, the compensation complete, and the vessels healthy, may be regarded as within the pale of life assurance, as, for instance, athletes who have given up sports, and women whose cardiac hypertrophy originated in frequent pregnancies, but are now past childbearing. Here the lives may be accepted with an extra, varying with the age. (7) All forms of degeneration of the cardiac walls, fibroid and fatty, must be excluded, and vigilant watch kept against their admission. (8) All forms of cardiac neurosis are not equally dangerous, but they are too uncertain in their clinical life history to allow of being admitted among the assured.—*New York Medical Journal, August* 6, 1898.

35.—LONG-STANDING CARDIAC CASES.

By Sir William T. Gairdner.

[The author gives the sequel of some cases related at the Brighton meeting of the British Medical Association in 1886.]

Looking back on my own article, I do not find there is very much to add to it in the way of "casuistic." I might find some more cases, but I am not aware that I could find anything that would throw any new light or develop any new principles.

Mitral Regurgitation: Disappearance of Murmur in Age.—But I may just state, in order to complete what is there reported, that No. 2 of the ten cases I referred to was one of the most protracted of them all. It was the case of a medical practitioner whom I knew of as having a cardiac murmur in quite early and middle life; and the condition, moreover, was apparently the result of rheumatism. When I first knew him he had a mitral regurgitant murmur, and he knew the whole circumstances and the whole prognosis of it as well as any man could possibly do. He was pursuing a very busy general practice in a very important town in the south of Scotland. He was a very intelligent man, and never allowed the consciousness of this fact to interfere with his activity, except when now and then he was laid up like other people, and suffered more or less. At various times he did suffer, and I have a distinct recollection of being telegraphed for once or twice by his wife to see him in attacks which were supposed to be more or less of the nature of angina pectoris. He complained of symptoms of that kind occasionally, and therefore the disease was not a mere trifle, but later than this, and after the date of the Brighton meeting, I came to know that the murmur had disappeared; that after being there, I suppose, for quite 30 years at least, the cardiac disease had mostly gone into abeyance or out of recollection. Nothing new occurred, and this gentlemen died in the end between 60 and 70, if not beyond 70, years of age, of a disease that had nothing whatever to do with the heart; in short, of muscular atrophy. That is the first supplement I have to give to the "casuistic" in that paper.

Post-systolic Murmur: Active Life without Symptoms.—The next is to continue the case of a gentleman whom I saw soon after I went to Glasgow in 1862. He was at that time a school-boy, perhaps 10 or 12 years old. He had an excessively loud hollow-toned blowing murmur following the first sound, in regard to which some doubt might be raised whether it was pulmonic or aortic—whether it was the right side of the heart or the left—but there was no doubt as to the fact. This murmur had been made known to my predecessor, Dr. Macfarlane, and this young boy was brought to me by his uncle with the view of my corroborating the fact, and giving any advice proper to the occasion. He was subject to slight cyanotic attacks, which I daresay gave his friends more anxiety than they did to the boy himself, and a degree of twitching of the muscles which seemed to lean in the direction of chorea. He never had well-

developed chorea, however. All that I thought it necessary to say at Brighton on that case was that he had grown up to manhood, was married, and the father of a family, and able to take a considerable amount of exertion. He was a sportsman, and shot grouse on his own hills, and he behaved very much like other men. I continue that report now. That schoolboy of the year 1862 who had this extremely loud murmur is still alive. He is not, so far as I am aware, very much different from other people in regard to health. He still does his shooting. He lost his wife, and has had the whole responsibility of his family on his own hands. He has a large house to keep up, and, as far as I know, is a man whom I class as fairly healthy. I have had only one chance to examine the heart. People do not like, for instance, to be stopped in the street and told, "There is something that I am curious about connected with your heart; would you let me examine it?" but I once got a chance of putting my head upon his waistcoat, and it appeared to me that the murmur had nearly gone. Therefore, there are two cases of practical extinction of well-marked cardiac disease.

Tricuspid Obstruction from Tumour: Survival for Ten Years.—The only other case belonging to the "casuistic" referred to is one on which I need not say much, because it is all in print. It is Case 5 in the order of those referred to at Brighton, and there is a very slight account given there; but I think it is one of the rarest cases of cardiac disease that has ever been recorded. I may say, however, that I was asked, in consequence of this and other allusions, to place it on record more completely, and have since furnished a very full account of it for the first volume of the *Edinburgh Hospital Reports*. It was a case of tricuspid obstruction by a tumour attached to the wall of the right auricle, but not implicating the valvular orifice, a fact of the greatest pathological rarity which, with the narrative of the symptoms and physical signs, makes the case, as I believe, absolutely unique; but its importance in regard to this particular point is that this man, having his tricuspid opening considerably obstructed by a ball-valve tumour coming down from the auricle, survived this condition of impediment to the course of the circulation for at least ten years after the signs were first detected. He did not suffer in any remarkable degree from his heart, and he died of pneumonia. The heart was found after death not very considerably altered in its general appearance—not markedly enlarged, not dilated. Altogether the case from that point of view is a very singular one, and, as I say, absolutely unique. (From a paper on "Heart Disease and Life Assurance," read by Sir W. T. Gairdner at the British Medical Association meeting in 1898.)—*British Medical Journal*, *September* 17, 1898.

36.—MALIGNANT ENDOCARDITIS TREATED WITH ANTI-STAPHYLOCOCCUS SERUM.

By Dr. Moritz.

Moritz (pamphlet, *Zur Serumtherapie bei Endocarditis maligna*, St. Petersburg, 1898, A. Wienecke) has been the first to treat a case of malignant endocarditis successfully with anti-staphylococcus serum. Considering the high death-rate in this disease (80 per cent.), which would be probably still higher if other forms of endocarditis could be excluded always, he thinks one case of recovery by the new treatment worth publishing. A man, aged 22, who had never had rheumatic fever or syphilis, became ill at Christmas, and was admitted to hospital on January 22. A diagnosis of acute endocarditis was made, complicated by a metastatic right iridochoroiditis. Great care was taken to exclude other diseases, such as typhoid fever. Widal's reaction was absent from the serum, and the diazo from the urine. In case the disease should prove to be a fresh infection grafted on an old valvular disease, he was treated at first for rheumatic endocarditis. Though the eye trouble was cured by February 20 with scopolamin hydrobromide and compresses, his general condition in spite of the above treatment grew steadily worse. The liver and spleen enlarged, and anorexia, epistaxis, a rash, and other grave symptoms arose. It was then decided to try injections of serum. It was hard to decide, however, which of the many bacteria capable of giving rise to ulcerative endocarditis were present in this case. The man had had gonorrhœa and cystitis, which, however, had been cured eight months before this illness, and no gonococci could be discovered. Practically the decision lay between staphylococci and streptococci. As the author had had a very similar case before (with the same sort of musical murmur), where staphylococcus albus et aureus were found post-mortem, he decided to try anti-staphylococcus serum prepared at the Imperial Institute for Experimental Medicine of St. Petersburg, and the first injection was made on February 25. Briefly, the result of six injections of 5 c.cm. each of this serum was to do away with all acute symptoms, and by March 11 the temperature was normal. There remained, however, a mitral regurgitant murmur, which was no longer musical, slight enlargement of the right heart, and an abnormally frequent pulse when he left the hospital on March 25. Whether his cure was permanent is still uncertain, but he had kept well when last heard of six weeks later. After the second injection there was a metastatic inflammation in the right calf, and after the sixth in the left ankle, which were eventually absorbed without suppuration.

Moritz thinks these go to prove that the serum acted directly on the diseased valves, since if the cicatrising process in these were stimulated, particles of vegetations would be more than usually likely to be cast off and to form emboli.—*British Medical Journal Epitome, July* 2, 1898.

37.—ANTI-STAPHYLOCOCCUS SERUM IN MALIGNANT ENDOCARDITIS.

By Dr. Moritz.

The author, in a pamphlet published at St. Petersburg, gives an interesting account of a case in which anti-staphylococcus serum was used with apparent benefit. The patient, a man aged 22, was admitted to hospital after twenty-seven days of illness. A diagnosis of acute endocarditis with metastasis in the right iris was made. Typhoid was excluded, as were also syphilis and rheumatic fever. The eye trouble yielded to a course of treatment with scopolamine and compresses, but the general condition became steadily worse—grave symptoms, such as enlargement of the liver and spleen, epistaxis, and a pectoral rash, appeared. The infective nature of the case was evident, and it was decided to try serum treatment. The serum employed was that from an animal immunised against staphylococcus aureus in the St. Petersburg Institute for Experimental Medicine. Although direct proof of the presence of staphylococci was wanting, the resemblance of this case with another, which had been previously shown to be due to a mixed infection with staphylococcus aureus and staphylococcus albus, seemed to indicate that this new serum might be of greater service than the better-known anti-streptococcus serum. Injections were commenced just a month from the date of admission into hospital, and after six injections of 5 c.c. each, all acute symptoms had passed off. In a fortnight nothing was left save a mitral regurgitant murmur, and some dilatation of the right heart, with an abnormally frequent pulse. It is interesting to note that, after the second injection of serum, there was a metastatic inflammation in the right calf, and after the sixth injection another in the left ankle. Moritz thinks that these prove the direct action of the serum on the diseased valves, causing detachment of particles of the vegetations, and the distribution of these into the general circulation.

[Dr. T. J. Bokenham, who abstracts this article, appends the following remarks :—]

It is much to be regretted that the author did not ascertain definitely the exact nature of the infective agent in the above

case. The task is without doubt a difficult one, but it should not be impossible to isolate the specific organism, especially when the patient is in hospital. Success can in many instances be obtained by proceeding as follows :—Carefully sterilise the skin of the forearm by scrubbing, first with soap and water, then with mercuric chloride lotion, and finally swabbing with spirit. Having sterilised a hypodermic syringe and needle by boiling, liquefy a tube of agar-agar peptone, and allow it to cool just above its solidifying point. Next pass a bandage round the arm, so as to produce distension of the veins at the bend of the elbow ; then plunge the needle of the syringe into one of the distended veins, draw up a syringeful of blood, quickly mix it with the fluid agar-agar, and, before solidification has taken place, pour the mixture out into a sterilised Petri capsule ; allow the capsule to remain for a day at blood-heat, and then examine with a low power. By this method the present writer has not seldom succeeded in obtaining a growth when previous attempts—by inoculating a tube of culture-medium with a single droplet of blood—had given entirely negative results. The necessary manipulations are quite simple to anyone fairly practised in ordinary bacteriological methods.—*Treatment*, 1898, *p.* 342.

38.—VASCULAR TENSION.

By Sir William Broadbent.

[The following is *The Lancet* report of Sir W. Broadbent's opening speech in the discussion on this subject at the Edinburgh meeting of the British Medical Association, 1898:]

The author thought it wise to limit the debate to arterial tension—*i.e.*, arterial blood-pressure, excluding the venous system. Nor did he propose to touch on the question of testing blood-pressure by different instruments. Vascular tension essentially depends on the force and quantity of blood delivered at each systole of the heart and also on the resistance in the small vessels—*i.e.*, the peripheral resistance. Owing to the size of these, capillary attraction and the friction of their walls are important factors. The pulse is our means of estimating vascular tension, and about this there are four points to note:—(1) The size of the vessel, which varies in some individuals at different times and widely in different individuals; (2) the state of the artery between the beats—whether it is full and round or collapsing and flat; this is the best test of the state of the peripheral resistance; (3) the character of the rise of each stroke (the aortic wave) whether short and gradual or high and sudden ; and (4) the degree of pressure required to obliterate

the vessel and stop the pulse. Turning first to low vascular pressure, its causes and significance, it may be noted that low tension is often found in long-lived persons who will tell us, perhaps, that they always had a weak heart. But in all cases it is necessary to examine the heart as well as the pulse. Lowered vascular tension is also met with in fever, and it may be the chief cause of the lowered nutrition, there being not sufficient pressure in the capillaries to ensure nutrient fluid exuding. Lower vascular tension is often associated with neurasthenia and is also met with in other conditions of debility. It is met with in epilepsy, and may be one of the factors in the production of fits. Turning, on the other hand, to conditions of high arterial tension, it is to be remembered that this often runs in families, and may then be found under these circumstances in very young persons. The effects of continuous high arterial tension are very important, and include hypertrophy or dilatation of the heart, dilatation of the aorta, atheroma of the walls of the aorta and large vessels, fibroid condition of the heart, and thickening of the valves. Variations in vascular pressure are of universal application in all kinds of disease. In neurasthenia, for example, the speaker had always more hope of a case when the vascular tension was high, for in such cases it is possible for the impurity of the blood, which is the cause of neurasthenia, to be eliminated. It was in cases such as these that a dose of blue pill changed the whole aspect of the world. In melancholic conditions the vascular tension was usually high; in maniacal conditions it was usually low. If this fact be borne in mind it helps us to understand how it is that sometimes morphia increases maniacal conditions instead of producing sleep, by lowering vascular tension. Attention to the arterial tension will often enable us to foresee such untoward effects. In epilepsy we find the two extremes of vascular tension are associated with the convulsions; when the tension is low the prognosis is less favourable, because the fits are then less dependent on the vascular condition. Uræmic convulsions are directly associated with high blood-pressure and not the uræmic poisons in the blood. Convulsions occur in high arterial tension from other causes. In many cases of gouty bronchitis, recurrent attacks of bronchitis in a gouty subject are usually attended by a pulse of high tension, and consequently the treatment of these cases is more successful by eliminants than by climatic treatment. As regards Cheyne-Stokes respiration the speaker had never seen it without high vascular tension. By some this symptom has been attributed to irritation of the respiratory centre or the cerebral hemispheres, yet, strange to say, a patient may go on with his business while the symptom continues for months. But in the speaker's opinion it was

usually associated with high tension, and he had more than once been able to observe a direct association. Cheyne-Stokes respiration must not be confused with "cerebral respiration," in which there was a complete cessation of breathing and then a sudden start after an interval. Turning to the general management of variations of blood-pressure, Sir William Broadbent first considered states of low tension. The essential origin of the condition must be ascertained, whether it be some vice of nutrition, some digestive derangement, or perhaps the absence of some internal glandular secretion, especially the suprarenal. In this connection it had recently been shown that cancer may cause death by some toxin it secretes. The drugs most useful here are digitalis and caffein, which help by their diuretic action to eliminate. The chief cause of high tension is some toxic condition of the blood, which must be eliminated. Here diaphoretics, moderate exercises, baths, diuretics, and purgatives are useful. He attached the greatest importance to mercury. Other purgatives, dose for dose, were not nearly so valuable as calomel, which seemed to have almost a specific action. As regards the contra-indication of mercury in albuminuria, he believed the old superstition was now quite exploded. At any rate, it was a fact that uræmic convulsions could be averted by calomel. Nitro-glycerine and erythrol tetranitrate were useful when other measures were inapplicable. —*The Lancet, August* 6, 1898.

39.—FUNCTIONAL IRREGULARITY OF THE HEART'S ACTION.

By J. Stitt-Thomson, M.D., F.R.C.P. Ed., F.R.C.S. Ed., Lincoln.

[From Dr. Stitt-Thomson's paper :]

Functional disorders of the heart are very numerous, and arise from many causes. Generally they are originated by morbid conditions of the blood, or it may be from a degenerate condition of the nervous system. Many and various symptoms arise. We have the hurried heart's action—the tachycardia—accompanying the exophthalmic goitre. We have the opposite condition—bradycardia—found so often with myxœdema, or after influenza. We have the palpitation of hysteria, arising no doubt from some unknown irritation of the vagus or cardiac plexus. We have, most commonly of all, the irregular cardiac beat of the anæmic girl—the hydræmic condition of the blood being responsible very frequently for the irregularity. All these cases are so common and their treatment so well known

that I will pass them over. Some most interesting cases, however, of functional irregularity of the heart have come under my notice within the last few years, and I will shortly draw your attention to three of these, as examples of true functional cardiac disorder, all more or less cured by treatment. Functional cardiac disorders have been described as neuroses. Irregularities, arising from causes operating at a distance from the heart, are described as neurotic, in contra-distinction to the nervous disturbance due to local disease. I do not like the words "functional" or "neurotic" — they are non-scientific terms, and are, I am afraid, often used to screen our own ignorance. But for clinical purposes they answer well enough, and our present knowledge of the exact causes of the so-called functional disorders of the heart is so limited that no more definite terms can be applied.

Anything which disturbs what might be called the natural harmony of the cardiac nerves must upset the normal rhythm of the heart beat. Reflex stimulation, arising possibly from irritation in the stomach or bowel, of the cardio-inhibitory centre, will cause undue slowness, and this effect is most marked in the auricles; irregularity is caused by the auricles failing to respond to contractile impulses. It is now tolerably certain that all irregularity of a functional character is due to vagus inhibition. Irregularity in itself may not be dangerous, but it is so usually accompanied by dilatation that it constitutes a danger, and as years increase in number so this danger increases in volume. Intermittance usually points to a feeble myocardium. The very irregularity indicates that the ventricle is not thoroughly emptied with each beat. Hence dilatation follows in its train, and whilst in the young there may be, and generally is, compensation by hypertrophy, in those beyond middle life the walls begin to thin, valves to break down, and general cardiac failure gradually appears. Functional errors of the cardiac ganglia and of the vagus are responsible for palpitation and irregularity of action, and to find out the nature of the error is the task of the physician, and to treat each case on its own merits is his aim and object.

The following three cases illustrate in a marked degree functional irregularity:—

Case 1.—A gentleman, aged 44, with a distinctly nervous habit, living a life of comparative ease and luxury, was, without any apparent cause, seized with a most irregular and distressing cardiac action. The organ was, so far as any examination could reveal, absolutely sound. The distress was very marked and the præcordial anxiety very evident. This patient was under my care for some weeks, and then left for another part of the country. He somewhat improved, but a sudden attack of brady-cardia, the pulse dropping to about 30, caused the local medical attendant natural alarm, and I was asked to see the case. On arrival the symptoms

had improved, but the pulse was still under 40 and intermitting. There was dyspnœa on the slightest exertion, the extremities were with difficulty kept warm; that the circulation was seriously disturbed was evident. Knowing the past history of the case, I, with confidence, assured the patient of an ultimate complete recovery to health. He rallied from the urgent symptoms in a few days, but the irregular pulse remained. He consulted, with me, several eminent medical men, and the various opinions expressed were more interesting than useful. Rest and a quiet life were recommended generally. Although there was no history of gout it appeared to me that a gouty condition, particularly a "gouty dyspepsia," could account for the symptoms, and treatment on those lines was carefully carried out for many months. Exercise was strongly insisted upon, although the patient dreaded walking upstairs or climbing the slightest hill. Horseback exercise, of which he was very fond, was indulged in moderately, and all dyspeptic symptoms treated by the usual remedies. After eighteen months of practically a life of misery the heart righted itself, and the health of the patient to-day is very good. When I tell you that he has hunted five days a week all last season, you will understand that there is not much cardiac mischief remaining.

Case 2.—A clergyman, aged between 50 and 60, has for some years complained of gout, and has had several "attacks" of this disease. He consulted me some months ago on account of what were apparently seizures of "tremor cordis," which came on suddenly at night, wakening him out of sleep. The symptoms were well described, and the cardiac anxiety and feeling of suffocation and impending death were evident. On examination, the gouty diathesis was clearly present. The heart was apparently quite sound, and the blood-vessels were not markedly rigid or tortuous, but the pulse was irregular. The patient was very anxious about his condition, and wished to know if he was likely to die in one of the attacks. This was clearly a case of "gouty heart," and a visit to one of our spas has completely removed all distressing symptoms. Exercise I have insisted upon, and as the patient is an ardent golfer there is no difficulty here. I have assured him that there is no immediate danger to life.

Case 3.—This is a very remarkable case of irregularity of the heart's action, and is one of the most interesting it has ever been my lot to treat. A young married lady has, since her childhood, had an irregular pulse. That is her own statement, and for the past three years I can testify to persistent irregularity of the heart's action. I have never found this patient with a regular pulse. During a pregnancy it certainly steadied wonderfully, but after the confinement the palpitation and irregularity were worse than ever. She is naturally healthy and active, but admits that hill-climbing makes her very breathless. She can, however, play tennis, and is, in fact, a very active young lady. About six months ago her condition caused me some anxiety. She became anæmic and breathless on the slightest exertion, and symptoms of backward pressure began to show themselves. She recovered under treatment from these urgent symptoms, and is at present in remarkably good health. Examination of the heart reveals nothing beyond a thumping "regularly irregular" organ. The irregularity has no regularity about it. It may miss a beat every five or ten seconds, but just as often misses every twenty seconds. It sometimes hurries on in a "fluttering" manner, and will then suddenly slow down—steady for a few minutes, and then begin its vagaries again. This goes on during sleep as when waking, and yet this patient enjoys life and can get about like other people. There is nothing to account for this condition; no gout and no gouty history, no special anæmia or

hydræmia, no enlarged thyroid. I conclude that this is a pure neuroses, and that some irritation of the nerve supply is present, but there my conclusions cease.

So far, I have purposely avoided the subject of special treatment, as I wish to draw attention to this subject in these, the closing, remarks. For functional irregularity most drugs have been tried, but only four seem really to do any good, and in my experience one answers much better than any of the others. Digitalis, strophanthus, strychnine, cactus—these four drugs are pre-eminent in the treatment of all cardiac diseases. Now if we admit that functional disease of the heart is due to a neurosis, we would naturally turn to some drug which would act directly, more or less, upon the nerve-centres. Digitalis, as we all know, acts directly upon the cardiac muscle; the first action is to slow the beat, to prolong the diastole, and to greatly increase the force of the systole. Hence the great value of this drug in a weakened myocardium and organic mischief. No doubt digitalis stimulates the medullary and spinal motor centres also, but not to any marked extent. Another objection to this drug is that, whilst functional irregularity is often due to indigestion, digitalis frequently causes dyspepsia. Strophanthus acts on the heart exactly like digitalis, but does not appear to have any direct effect upon the nervous system. Strychnine more nearly approaches our idea of a suitable drug for cases such as are under our notice. Direct excitation of the medullary vasomotor centre is the property of strychnine; this property it is that raises strychnine to a valuable cardiac remedy. Cactus grandiflorus (night-blooming cereus).—This drug has in my hands proved of very great benefit in cases of purely functional cardiac disorders. All the foregoing cases, and many others, have been treated by it, and in every case benefit seems to be derived from the continued use of cactus. The accurate therapeutic history of this drug has yet to be written. It appears to be a cardiac tonic of no mean order, free from cumulative or narcotic action, and it is a slight diuretic. It does not produce any material constriction of the arterioles. It would appear to act more directly than other drugs mentioned upon the medullary, vasomotor, and cardiac centres — 2 to 5 minims of the liquid extract of the cactus grandiflorus, given three times a day, or 2 to 10 minims of the tincture. This dose can be increased to 30 minims. A useful form in which to give this drug is in "cactina pillets." Each pillet contains the $\frac{1}{100}$ gr. of cactina, the active principle of Cactus Mexicans..—*Edinburgh Medical Journal, September*, 1898.

DISEASES OF THE ORGANS OF RESPIRATION.

40.—THE X RAYS IN DISEASES OF THE CHEST.

By Hugh Walsham, M.A., M.D. Cantab., M.R.C.P. Lond., Assistant Physician to the City of London Hospital for Diseases of the Chest, &c.

I venture to think that a systematic application of the rays to the diagnosis of chest disease will prove of value to the physician. From some cause the X rays have up to the present time not been so extensively used by the physician as they have by the surgeon, and yet they are capable of showing very distinctly pathological conditions within the chest. This, I think, will be quite apparent from an examination of the two skiagrams.

[The skiagrams are omitted here.]

The first is from the chest of a perfectly healthy boy, aged 9 years. It is seen at once that both lungs in a healthy condition are perfectly transparent to the rays from apex to base, allowing the posterior portion of the ribs to be clearly seen. Some slight shading will be seen on each side corresponding to the position of the larger bronchi, but with this exception, the healthy lung is quite transparent to the rays. Whether this transparency continues with advancing life I am not quite sure; probably it does not. I think that as life advances the lung becomes somewhat less transparent, but this of course affects the whole lung equally. If we now turn to the second skiagram we see at once that there is a great difference. The skiagram is from the chest of a boy, aged 15 years, who came under my care when I was in charge of Dr. Harrington Sainsbury's wards during the past summer. Physical examination of the chest gave signs of a cavity at both apices. On the left side the physical signs of the cavity extended from the apex downwards to the level of the third rib. I was therefore much surprised on examining this patient with the fluorescent screen to find that the cavity was, comparatively speaking, a small one, certainly not extending so far downwards as auscultation led one to suppose. The cavity at the right apex was also smaller than one would have thought from auscultation signs. The cavities are well marked in the skiagram as two more or less round clear spaces surrounded by a dark shading. On looking at the lower parts of the lungs we see varying degrees of transparency mixed up with tracts of shading. This shading corresponds, no doubt, with consolidated lung tissue, but partly perhaps with pleural adhesions.

I have quite lately had the opportunity of taking a skiagram of a pleural effusion (serum). It shows a uniform darkening of the whole of the affected side, quite unlike the mottling of the lung in tuberculosis. This darkening stands out in marked contrast to the transparent lung tissue on the unaffected side. The diaphragm also stands lower on the affected side. I think it is very probable that, with the aid of the X rays, one may be able to distinguish between serum and pus, but at present I have not had an opportunity of making the observation. I think it is doubtful if the rays can enable one to distinguish between consolidation of the lower lobe of a lung and an effusion into the pleura. Early cases of tuberculous consolidation of one or other apex display its presence by a dark shading at that apex, probably before physical signs become apparent. Enlarged bronchial glands, especially in children, are, according to Professor Bouchard and Professor Claude, easily distinguishable by the X rays, but of this I have had no experience. It does not appear likely that the X rays will be of much use in the examination of the heart. True, they will show enlargement of the organ, but of this we have abundant proof without their aid. I think it is in lung disease, especially in tubercle of the lung, that they will be found of great use both in diagnosis and prognosis.—*The Lancet, October* 15, 1898.

41.—ACUTE PNEUMONIA IN CHILDREN.

By James Carmichael, M.D., F.R.C.P. Ed., Physician to the Edinburgh Royal Hospital for Sick Children.

[The following remarks on treatment are taken from Dr. Carmichael's paper:]

As yet we have no special treatment for acute pneumonia. The antitoxin has not yet been discovered, but this is a line of research well worthy of attention. All we can do is to treat each patient according to the special needs of the case, meeting symptoms as they arise by rational means. In all cases hygienic measures, including diet, are all-important. The patient should be in a well-ventilated room of mean temperature. I find a tent-bed invaluable, hung round inside with wet towels sprinkled with eucalyptus or creosote, or other antiseptics. In very severe cases, with much cyanosis, the inhalation of oxygen mixed in the air of the tent often proves of signal benefit. The dieting should be conducted on the general principles applicable to all febrile affections—light, easily digested nutriment, in such

quantity as the patient can digest. Over-feeding is harmful as likely to bring on vomiting and diarrhœa, which are complications always to be dreaded. Continuous and routine poulticing is now discarded, poultices being used, as other therapeutic means, according to the necessities of the case. A stimulating sinapism, occasionally applied all over the chest for half an hour or an hour, is often very serviceable, this being replaced by a pneumonia jacket of Gamgee tissue ; when the temperature is high and the skin is not acting, a moist continuous poultice of soft flannel and jaconette, moistened with boracic solution, is very grateful to the patient. By keeping up a local as well as general diaphoresis, relief is given to the engorged lung, whose blood vessels are in a state of hyperæmia and permanent dilatation, the cutaneous blood vessels, which are in the opposite condition of high tension, being thereby relieved.

Drug treatment.—As no drug yet known has any special influence on the disease, we must treat the patient by endeavouring to assist nature in her efforts to maintain a compensatory physiological balance in the functional activity of the various organs. In the reference already made, in regard to dieting, I have indicated the necessity of due attention to the digestive functions. The respiratory embarrassment can be best relieved by keeping up a continuous local and general diaphoresis, as already indicated. This should be assisted by the exhibition of non-depressing diaphoretics, such as liq. acet. ammoniæ and sp. etheris nitrosi, a combination which has well stood the test of experience. The nitric ether is most valuable in relieving the general vascular tension apart from that of the lung. Alcoholic stimulants are of great value, especially in broncho-pneumonia. They must be administered in suitable doses, according to the exigencies of the case and the state of the pulse. Next in importance as a stimulant I regard strychnine. The indications for its use are similar to those of alcohol, and it may be given with advantage at the same time. I regard it as of more value in the acute respiratory affections of children than in adults, on account of its action on the cardiac respiratory centres and cardiac ganglia. In children it is well known that the nerve tone is more rapidly lowered from acute disease than in adults, hence the great importance of anticipating this by the timely use of such a remedy. The use of belladonna, in certain cases of acute respiratory affections of infants, is one of the most striking therapeutic facts I know of. The cases in which it is indicated are those, particularly of infants, attacked with acute congestive bronchial catarrh in the early stages. It is well known that in these cases there is great respiratory embarrassment, due partly to the congestive conditions, which is accompanied by more or less bronchial spasm and collapse of

the lung. Its action in soothing the afferent and efferent nerves in the bronchial walls, and stimulating the respiratory centre, is most marked. It has no beneficial effect in the later stages where the alveoli are involved, but its timely use in the earlier stages of the disease is attended with striking results. My remarks on the drug treatment of acute pneumonia would be incomplete were I not to refer to digitalis, and I only do so to condemn its use as a routine remedy. I do not for a moment undervalue the importance of employing this drug in cases where its use is clearly indicated—feeble pulse with weakness of the left ventricle and diminished arterial tension; such conditions obtain occasionally but not frequently in the advanced stages of acute catarrhal pneumonia. In fibrinous pneumonia with large lobar consolidation, on the other hand, the condition of the arterial system clearly contra-indicates its use. The state of the blood vessels in the affected part are those of distension and paralysis, the systemic arterial circulation being in a high state of tension, with an enfeebled and distended right heart. In such cases we have no proof that digitalis has any power in restoring the tone of the blood vessels in the affected part. It cannot act on the right heart without more powerfully, on account of the greater muscular area, stimulating the left ventricle to congest the affected lung by "diminishing the vascular area" (Loomis). Heart failure in lobar pneumonia, as I indicated in an early part of this paper, would appear to be due to two principal causes—the depressing effect of the toxins on the nervous centre, and of a high temperature on the heart muscle. If this be so, there are no indications for digitalis, but rather for such remedies as act directly by stimulating the nerve centre on the one hand, relieving the local hyperæmia on the other. I believe that local and general diaphoresis, occasional purgation, and remedies which stimulate the cardio-respiratory centres, are the most appropriate means of combating this condition.

Antipyretics.—The use of large doses of phenacetin or antipyrin are in my experience not useful, often harmful, in both forms of pneumonia. In small doses, however, they are often of service in allaying nervous irritability and restlessness. In hyperpyrexia we must trust to the wet pack, or tepid bath, or the application of cold by ice-bags, or otherwise.

Expectorants.—I regret to find that even yet in these more enlightened days, such remedies as ipecacuanha, tartar emetic, and squills are still prescribed by some physicians. There is no indication that I know of, but a distinct contra-indication for their use. Children suffering from pneumonia require rather stimulation than the exhibition of depressing remedies such as these.—*Edinburgh Medical Journal, August*, 1898.

42.—SOME ATYPICAL FORMS OF PNEUMONIA.

By C. F. Martin, B.A., M.D., &c., Lecturer in Medicine, McGill University; and
Harvey Smith, M.D., Resident Physician, Royal Victoria Hospital.

[The following is taken from Drs. Martin and Smith's paper :]

Year after year, diseases which are epidemic present variations not only in the individual cases, but likewise in the disease as a class, and it is by no means easy to detect the reasons for these general departures from the usual types. During the past season, it has been our experience at the Royal Victoria Hospital in meeting with an unusual number of cases of pneumonia, to find comparatively few typical so-called text-book types. Only two or three at the most, out of fifteen or twenty cases, have presented a frank pneumonia where the temperature has run from five to ten days a high continued course followed by a crisis. In many of the cases indeed, the onset has been most insidious, the initial symptoms continuing over several days, and being those rather of a mild form of influenza with slight malaise and perhaps chilliness, headache and gastro-intestinal symptoms, all of which are superseded after some days by the initial pleural pains of pneumonia. In several of the cases too, the gastric symptoms were so marked as to completely mask in the earlier stages the true nature of the disease. One case is peculiarly interesting as showing precisely the reverse of this mode of onset, the patient presenting the initial rigor within twelve hours of the time of exposure, his condition previously being that of perfect health. True rigors at the onset of the disease have been comparatively few, *i.e.*, in less than one-third of all the cases. So far as the children are concerned, of which there have been seven ill with pneumonia, the onset was likewise gradual and was in no instance demonstrated by convulsions which under ordinary conditions is apparently fairly common. So insidious has the onset been in certain cases that it has only been through the ordinary routine examination of the lungs that the signs of consolidation were manifested, as in the case of one child who entered the hospital because of some pain in the neck, while in another instance, a child who was originally brought to the Outdoor Department on account of general malaise, was found to have the apex of one lung consolidated without there being any other subjective or objective signs of the affection. This same child who had for some five weeks a markedly high temperature accompanying the pneumonic process, was never at any time in any obvious distress, and insisted throughout the course of his malady on sitting up in bed.

Histories such as the following have been quite common in the present epidemic. The patient entered the hospital complaining that early in the malady for six days he had had coryza, neuralgic pains in the legs, and sore throat, followed by nausea and occasional vomiting. At no time did he have any chill. One week later, pain in the side developed and the patient, though endeavouring to keep on with his employment, was obliged to take to his bed, and a few days later came to the hospital, one lung being found in a state of partial consolidation. During the next week that he was under observation there, his temperature assumed a distinct intermittent type, as the chart will show, and although a complicating pleurisy with effusion was suspected on account of this irregularity in the fever we were never at any time able to obtain proof of its presence. This question of temperature has been throughout the series of cases one of the most interesting features. In two patients where the ordinary basal consolidation was present without complications, the temperature assumed a markedly intermittent type for at least one week. Pseudo-crises have been the rule rather than the exception, there being often several in the same patient. Remittent temperatures and termination of the fever by lysis has likewise been among the commoner manifestations. One of the patients in whom this was manifest was a young married woman in whose family during the same week there had already been two other cases of the same disease. Five days after the initial rigor, she took the cars for some distance towards the hospital, and then walked a quarter of a mile in order to gain admission. She was practically moribund on being placed in bed and the heart itself was showing signs of failure, the second pulmonary sound being distinctly weakened. However, the condition fortunately subsided, and though no complications could be detected, the temperature ended in much the same manner as do ordinary cases of enteric fever.

Among other interesting features which have been noticed in the present epidemic has been the insidious manner in which pleurisy with effusion may complicate the disease, and in several cases where the temperature was either on the descent, or had already attained normal, fluid either serous or sero-purulent had collected without manifesting any appreciable alterations in the temperature. In one case indeed, the fluid collected within twenty-four hours, filling half the chest without there being any evidence to indicate it on the chart. Aspiration of this patient's pleural cavity showed the presence of sero-pus, which disappeared without further operation. That pus may be present in the pleural cavity without appreciable chart alterations is of course a well recognised fact, but to have it completely fill the pleural cavity as in another instance, where

the pulse, temperature and respirations were normal, is certainly among the very atypical forms of disease. In yet another of our cases delirium tremens was present and the pneumonia occupied but a very secondary part of the symptomatology. It is perhaps less uncommon to find in patients with delirium tremens a great elevation of temperature, and the condition may go on insidiously though much of the lung be involved. Such was the condition in our case referred to where, though there was but slight rise of temperature, the rusty sputum and evidences of consolidation in a portion of one lung, were quite sufficient to make the diagnosis of pneumonia undoubted. Examination of the blood showed that in most of the cases leucocytosis was present, and it has been our experience to find that in the non-fatal cases a good prognosis is certainly associated with its presence. The most marked leucocytosis present in any case was 44,000 to the c.mm. Delayed resolution had not been uncommon, the signs of consolidation persisting often for many days after a crisis would have been expected. In two instances occurring some months ago, delayed resolution was of such a nature as to arouse the suspicion of a tuberculous pneumonia although the temperature had attained the normal for some days. Tuberculin was injected without a definite reaction, and a correspondingly good prognosis was given to the friends, a proceeding which was finally found to be quite justifiable, the patients both ultimately making a good recovery. —*Montreal Medical Journal, July*, 1898.

43.—ETHER PNEUMONIA.

By David Drummond, M.A., M.D., D.C.L., Senior Physician to the Royal Infirmary, Newcastle-upon-Tyne.

[The details of the fatal cases have been omitted here, as well as the temperature charts.]

It has long been known that the administration of ether is attended by more or less risk from its action upon the bronchial mucous membrane; and surgeons have consequently exercised care in selecting suitable cases so as to avoid the danger as far as possible. My object in bringing forward the subject is to draw attention to the nature of the pulmonary mischief that arises from ether, which has not apparently received as much notice as it deserves; for, as far as I know, our textbooks contain neither a pathological nor a clinical description of the disease. The subject was brought under my notice some time ago by my colleague, Mr. Rutherford Morison, who has kindly allowed me to examine a number of cases that occurred in his

practice. These cases were chiefly abdominal operations, and this is a point of very considerable importance. I am not able to offer a statistical statement as to the frequency of pneumonic complications in cases of ether administration, but propose simply to make a few observations upon the physical signs significant of the condition and to record the result of two necropsies with microscopical examination of the lungs. That the subject is of importance is made abundantly clear by the fact that I have two post-mortem examinations to record, and I am of opinion that if the lesion were more generally recognised a number of deaths, now ascribed to sepsis after operation, might more correctly be laid to the charge of ether.

An examination of the temperature charts shows that the fever does not run any regular course. In seven out of eight cases the temperature rose within 24 hours after the operation to 101° or higher. In one the elevation did not occur until the morning of the fourth day, and this proved a very slight attack, as the temperature fell to normal on the fourth day, and did not rise again. In one of the fatal cases, in a man aged 45, death occurred on the tenth day, and the temperature rose to 104° on the sixth day, where it remained nearly stationary until the ninth, when it rose to 105°, and to 107° on the day of death. In the other, in a man aged 50, death occurred on the fifth day, and the temperature was high from the beginning.

[The first case was an exploratory operation for renal calculus, and the second amputation for a crushed foot.]

Various parts of the lungs from both these cases were examined microscopically. The exudation in the tubes was found to consist of pus cells, large granular corpuscles, and ciliated columnar epithelium, which was present in great abundance. The consolidated lobules showed the appearances typical of catarrhal pneumonia, the alveoli being filled with desquamated epithelial cells, and in both cases they contained a considerable number of red-blood cells. In the first case this was marked to an extraordinary degree, and here and there little else than red cells and material that resembled broken-up red-blood corpuscles was to be seen. The fine tubes were uniformly blocked with pus and catarrhal cells, and the large tubes contained vast numbers of desquamated columnar epithelium. The condition in both cases was that of acute catarrhal or lobular pneumonia, though red-blood cells entered into the alveolar contents in an unusual degree. The remaining 6 cases recovered after a pneumonic illness attended by fever which varied from three to eighteen days. In 2 the febrile symptoms continued for nine days, in 1 for four, and in 1 for twelve. In all abdominal operations had been performed; 2 double ovariotomy, 1 pyloroplasty, 1 laparotomy for ectopic

gestation, 1 epiplorrhaphy in case of cirrhosis of the liver, and 1 an exploratory operation in case of dislocated liver. In all the physical signs were those of bronchitis with varying degrees of consolidation. The expectoration was invariably muco-purulent, and in some instances was exceedingly copious, whilst the patients that made the most successful attempts at coughing did best.

With reference to the question of causation, it has been maintained by Dr. Whitney, in a paper that appeared in the *Boston Medical and Surgical Journal*, under date September 23, 1897, that ether pneumonia is a microbic disease, and may be prevented by thoroughly cleansing the mouth, nose and palate of the patient, and the mouth-piece, &c., employed by the anæsthetist. The author, however, in my opinion, weakens his position by stating that "the most careful observations have shown that the disease in the fatal cases differs in no way from the ordinary fibrinous form" (of pneumonia), a view with which I cannot agree. I regret that there was no bacteriological examination made, and therefore I am not in a position to deny the presence of microbes; indeed, I have no doubt they existed in the bronchial discharge and contents of the diseased alveoli; but I venture to maintain that the ether is the most important cause of the mischief, the microbe notwithstanding, and that it is to this factor we must turn our attention when considering the prevention of the disease. Two other points would seem to play important parts, first a susceptibility on the part of the patient owing to previous pulmonary attacks, and secondly the nature of the wound making it difficult for the patient to cough, for it must be borne in mind that the majority of cases follow abdominal operations.

Dr. J. M. Anders, of Philadelphia, states in a paper read before the recent meeting of the American Medical Association that ether pneumonia occurs once in about 300 cases. This I suspect is understating the case, though as I have said, I have no statistics to offer. The author also lays stress upon the antecedent lung disease as a predisposing factor, and with this opinion I fully agree.—*British Medical Journal*, *October* 1, 1898.

44.—PURE AND MIXED INFECTIONS IN PULMONARY TUBERCULOSIS.

By Robert J. M. Buchanan, M.D., M.R.C.P.

[The following is taken from Dr. Buchanan's very instructive paper:]

It has been found by experiment that inoculations of innocuous micro-organisms may prove fatal, provided another kind of

organism be inoculated at the same time. Monti found that old and attenuated cultures of the staphylococcus Pyogenes aureus, or pneumococcus, always proved fatal, provided a culture of an innocuous organism, such as the Proteus vulgaris, were injected at the same time. This brings us face to face with the consideration of mixed infections. It is chiefly to Babes that we are indebted for the knowledge of the various organisms met with in tubercular foci.

We must now consider how mixed infection bears upon the prognosis in cases of pulmonary tuberculosis, and how are we to recognise it by simple methods? A pure localised tubercular lesion of the lung is not so serious a condition as one naturally presupposes. Many cases of old standing and quiescent or cured tubercular lesions are found on post-mortem examination when no suspicion has arisen during life. This alone goes far to prove that spontaneous cure is by no means rare. Such cases I would consider pure infections. Cases are ever passing through our clinical records where the disease drags on a slow course, where its ravages are limited, and the process of destruction prolonged. It is certainly, I am happy to say, the experience of many of us, that we can enumerate cases of cure which have been followed from start to finish. Such cases, I believe, have been cases of pure infection. On the other hand, we can produce a long list of cases that have rapidly gone downhill in spite of all attempts to arrest or cure the disease. Quite recently (*Munch. Med. Woch., January* 4, 1898), Von Ziemssen draws particular attention to the fact that the condition of the lungs in tuberculosis is an extremely complicated one, and that the complication rests in the existence of mixed infections, and that the lung cannot be protected from the staphylococcus and streptococcus infections. Working independently, and after a prolonged investigation extending over a period of years, I have been convinced that the great source of danger in pulmonary tuberculosis resides in the association of the tubercle bacillus with other organisms; and that once this mixed infection has become well established the prognosis is proportionately increased in gravity. Such a mixed infection may be due to a variety of organisms or only one species. Now, to the question:—How are we to recognise this condition of mixed infection? Preliminary preparation is necessary to insure freedom from the ordinary organisms of the saliva as far as is possible, so that one may hope to obtain material from below the glottis, uncontaminated by its passage through the mouth. I therefore endeavour to obtain this result by the following method:—A perfectly clean bottle, with a well-fitting cork, is given to the patient, with instructions that, previous to using it, the bottle and cork must be placed in boiling water,

the bottle drained, and the cork inserted while it is upside down; this is to be kept corked until used. After fasting for some hours, the mouth is to be thoroughly cleansed several times with a brush and antiseptic wash, all the recesses of the teeth and the tongue to be well scrubbed. After each brushing the mouth is to be well rinsed out with the antiseptic wash with as little delay as possible. The patient is to expectorate into the bottle, re-cork it, and submit it for examination as soon as possible. By this means one may obtain a fairly reliable sample of sputum from the lung. In proceeding to examine such a specimen, the small yellow particles are to be taken and the mucus left; for these particles, it is presumed, come from the deepest recesses of the lung. In such a specimen, stained by Ziehl-Neelsen's method, the T. bacilli will be stained red and the other organisms blue. These can readily be detected with a $\frac{1}{6}$-in. lens and a good eyepiece, and this magnifying power is most useful for general purposes. One can easily distinguish the T. bacillus, and, from a morphological standpoint, recognise the presence of other organisms—staphylococci, streptococci, diplococci, the latter encapsuled or not, as the case may be, and also the Micrococcus tetragonus; or, in addition, mould organisms. So far, I have confined my examination to masses of staphylococci and chains of streptococci, although not ignoring the presence of other forms of organisms. I would suggest that the presence or absence of such mixed infection bears adversely or not on the prognosis, provided that our primary assumption of virulence and resistance remains a constant. The number of secondary organisms may vary greatly, but in some cases they are in such profusion as to form masses and long chains; and in one case particularly I have found such a combination as true alveolar casts of tubercle bacilli associated with alveolar casts of staphylococci.—*Liverpool Medico-Chirurgical Journal*, *July*, 1898.

45.—THE PROGNOSIS IN PHTHISIS.

After the diagnosis of phthisis the next point in importance, from a medical point of view is prognosis, and in an interesting article by Dr. H. P. Loomis, published in a recent number of the New York *Medical Record*, the author directs attention to sundry points which merit attention in this relationship. It has long been recognised that in the treatment of phthisis the patient's stomach is the battlefield; in other words, inveterate dyspepsia and the inability to influence the progress of the disease. This process is specially well-marked in persons who

possess what we may call the fibroid diathesis. In certain people, irritations of all kinds tend to set up fibroid changes, and in such subjects this tendency appears to be the principal element in arresting the disease and leading to a relative cure. In respect of the prognostic importance of hæmoptysis it is curious how opinions vary. The popular idea is certainly that hemorrhages imply an unfavourable outlook. Stricker, who had exceptional opportunities for observation in the German Military Hospitals, found that 86 per cent. of soldiers attacked with hæmoptysis, without known cause, subsequently became tuberculous. Dr. Loomis, however, holds that hæmoptysis early in the disease does not affect the prognosis one way or the other, especially if the attack is not followed by fever lasting several days. Of course, hemorrhages occurring later in the course of the disease are of much more serious import. The influence of heredity in determining the course of phthisis in particular subjects is another much-disputed point. Its elucidation is rendered the more difficult seeing that, intentionally or otherwise, the information given by patients and their relatives is often altogether misleading. As the author observes, whatever the conclusion the medical profession of to-day has reached as to the importance of heredity in phthisis among the people it still holds the first place. His own experience, however, is that tuberculous heredity has very little to do with the question of a person's recovery, other things being equal. Physicians are generally agreed that alcoholic subjects do badly when they contract phthisis, and the downward course is usually rapid. With these patients marked dyspnœa and a tendency to pulmonary hemorrhage is often witnessed. No patient can be considered to be progressing favourably whatever change the symptoms may have undergone unless he is gaining in weight, but this is a fact too well known for to be necessary to do more than mention it. Dr. Loomis attaches perhaps an exaggerated importance to the personal equation. In so far as the sufferer does not possess sufficient will power to do all that lies in him to place himself under the most favourable conditions for recovery, this factor is indisputably of importance, but the "temperament" is often but the reflection of the intensity or special character of the morbid process. It is, therefore, rather a symptom than an influencing factor. In respect of the lung lesion itself strict localisation is the most important element. The prognosis is more favourable in a patient in the third stage of phthisis, with a cavity at one apex and the rest of the lung normal, than in another with very slight tuberculous changes if these are scattered throughout the organ. It is particularly in the former class of cases that climatic treatment seems to do most good, and this is a point which practitioners ought to bear

in mind in deciding on the expatriation of a patient. Even in these localised cases, however, early treatment is of vital importance, thence the value of early diagnosis. The author remarks that properly assimilated food is an element of the gravest import in determining the probable course of the disease in a given case. The degree of gastric incompetency is often out of all proportion to the extent of lung mischief, and it is, so far, a more important morbid factor than the pulmonary disease *per se*. When the assimilation of food is good the prognosis is always favourable, even when the condition of the lungs is unsatisfactory. Rapid heart action at the onset of tuberculosis is another unpromising symptom. When the heart's action is always above normal, even when at rest, and when, on the slightest exertion, it goes up to 110 or 120, the outlook is always unfavourable. This condition is usually met with in young subjects with what is popularly termed a "highly strung" nervous system. The rapid pulse in these cases is not dependent on an abnormally high temperature, for the pulse may be rapid even when the temperature is normal. Age does not appear to be a factor of any great importance as far as the curability of the disease is concerned, but it is very important when we come to estimate the probable length of life in a subject advanced in years. Age appears to modify the type, and to exert a controlling influence, but in that large class of patients in whom tuberculosis develops as a sequel to a subacute pleurisy or coincides with the existence of marked changes in the pleura, recovery is the rule rather than the exception provided they are placed under suitable climatic conditions. Even in the absence of such conditions the advance of the disease in these patients is usually slow, and is marked by stationary periods.—*A leading article in the Medical Press and Circular, August* 10, 1898.

46.—OPEN-AIR TREATMENT OF PHTHISIS.

By Dr. Burton-Fanning.

The author (*The Practitioner*, June, 1898) says that the following are the conditions which experience has shown to be conducive to the best results in the open-air treatment of phthisis:—(1) Purity of the air; this must be comparatively free from bacteria, dust, and smoke. (2) The air should be cool and bracing. (3) Abundance of sunshine is an obvious advantage, not only from its beneficial influence on the human economy, but also from the property sunlight possesses of destroying the tubercle bacillus and other microbes. (4) Dryness of the soil. (5) Very humid atmospheres are probably prejudicial to recovery from their depressing effects on the

general strength, and it must be admitted that exceptional dryness characterises the air of mountain resorts ; but moderate moisture is no insuperable objection, as is proved by the results obtained at Falkenstein. (6) Winds, on the whole, are unfavourable from their chilling effects. (7) Finally, elevation above the sea level is admitted to be advantageous, though, as regards healing properties, the air of altitudes differs from that of lower-lying resorts only in degree and not in kind. It is very doubtful whether rarefaction of the air has any special action in phthisis. Foreign sanatoria naturally fall into two groups, in one of which the patients are quartered in a single large building, whilst in the other they inhabit a number of detached cottages or villas. The first group is represented by the sanatoria at Görbersdorf, Falkenstein, Hohenhonnef, and Ruppertshain ; the second by those of Nordach and Reiboldsgrüne, in Germany, and by the Adirondack Loomis Sanatoria in America. Each plan has its advantages and disadvantages. The danger which might attach to the aggregation of many consumptives is prevented by simple precautions, which are proved to be efficacious by the fact that there is not a single instance of the spread of infection from a consumptive patient in these institutions. The sputa are received into flasks or some equivalent, and spitting elsewhere is forbidden, usually on pain of instant dismissal. Linen is disinfected, and the rooms, which are specially constructed with rounded angles, are regularly cleaned with damp cloths. Carpets and hangings are absent. The diet is very liberal ; as a rule, there are five meals a day ; at Nordach there are three only, but the patient is required to eat about twice as much as he feels he wants. Milk is given at all the sanatoria. Thus at Hohenhonnef three litres are taken in addition to regular meals. The views in regard to exercise differ in the various sanatoria. At Falkenstein almost perfect rest is enforced until the disease has been arrested and pyrexia entirely ceased ; whilst at Görbersdorf and Nordach moderate walking is advised to many patients who have still some degree of pyrexia. Two facts stand out clearly on comparing the treatment at these various sanatoria. At all of them a most liberal diet is provided, and secondly an absolutely open-air life is led by all the patients, whether the disease is acute or chronic, pyrexial or not, in all weathers and seasons. The two clinical results which seem constant from this open-air treatment are reduction of pyrexia and increase of appetite. It is difficult to give statistics of the results as regards cure of this open-air sanatorium treatment. Weber estimates that 13 to 14 per cent. recover perfectly, 15 to 17 per cent. recover nearly perfectly, 22 per cent. remain stationary, whilst the remainder, 22 to 23 per cent., become worse.—*The Hospital, October* 8, 1898.

47.—SERUMTHERAPY IN PULMONARY TUBERCULOSIS.

By Drs. Maragliano and Landouzy.

Maragliano (Genoa) presented a report on the treatment of pulmonary tuberculosis by serumtherapy. The following is a summary of his conclusions:—A period has now been reached in the history of medicine when it no longer seems rash to consider the possibility of using serumtherapy against tuberculosis. The presence of tuberculous antitoxins in the blood of animals into which the poison of tuberculosis has been injected is certain. The most active tuberculous toxins are those derived from watery extracts of Koch's bacilli; these are neutralised in animals by the antitoxin contained in the blood of animals which have received injections. The serum which contains the antitoxin is harmless for animals and for human beings. This serum can, in certain conditions, bring about a lasting clinical cure of human tuberculosis. The use of this serum is justified: (1) By the action of the serum against the poisons, and, perhaps, against the bacilli, of tuberculosis. (2) By the analogy of the therapeutic process due to the serum with the defensive processes originating within the organs infected with tuberculosis; this analogy is shown (*a*) by the presence of antitoxin in the blood of a healthy human being; (*b*) by the production of the antitoxin in a human being who has been injected with the tuberculous poisons; (*c*) by the presence of the antitoxin in the organism of patients in whom spontaneous recovery from tuberculosis takes place. (3) The favourable action of the serum is shown clinically in the human subject:—(*a*) By the fall of temperature; (*b*) by the disappearance of the bacilli; (*c*) by the cure of the broncho-pneumonic foci.

Landouzy said that to make a true serumtherapy of tuberculosis possible it was necessary, in the first place, to find a means of producing a truly anti-tuberculous serum; for this purpose it was necessary to find a means of surely vaccinating animals against tuberculosis. Landouzy reviewed at length the efforts towards this end made by Maragliano, Behring, and others, concluding by affirming that up to the present no antituberculin had yet shown itself constantly and adequately victorious either in man or in animals. As regards the specific treatment of tuberculosis, he said, we are still only in the period of hope. But even if a preventive and curative antituberculous serum were found, more must not be looked for from serumtherapy than it can do. To expect that it will suppress bacillosis, cure tuberculous infection, and repair parabacillary inflammation is to expect more than will probably

ever be accomplished by the nearest approach to a specific treatment that will ever be discovered. The only chance of serumtherapy doing any real good is to use it in the very earliest stage of the disease. If a really effective serumtherapy were found to-morrow it would not take the place of hygienic methods ; the regulated "phagotherapy" and "aërotherapy" by which the best cures are at present brought about. Whatever progress is made in serumtherapy, tuberculosis will always be more easily prevented than cured.—*From the Report of the Paris Congress of Tuberculosis, British Medical Journal Epitome, August* 13, 1898.

48.—ASTHMA AND ITS TREATMENT.

By Dr. Beverley Robinson, of New York.

The author said that among the diseases which the practitioner is called upon to treat none is of greater interest than asthma. This interest is partly due to its etiologic obscurity. The cases of so-called nervous asthma in the speaker's experience have been infrequent, and he believed that when we are better informed examples of purely functional asthma will perhaps no longer be described. He believed that despite the existing nervous irritability the asthmatic attack would rarely occur were there not other discernible cause which more advanced researches will reveal. Conditions of the blood are often ignored. Malarial toxæmia is frequently present and yet overlooked. It is wisdom to act in accord with its recognition. If there be a sudden chill followed by rise of temperature and sweating, and if at the time of the chill and previous to the giving of quinine internally a skilful microscopic blood examination be made, the plasmodium malariæ should be found. For an asthmatic attack of probable malarial causation he advised increasing doses of Fowler's solution of arsenic to its physiologic effect ; if the bowels are constipated and liver inactive, Warburg's extract in 5-grain doses three or four times daily ; if anæmia be present, quinine, iron, and arsenic in a suitably formulated pill, the following being a favourite with the speaker : 1 grain of reduced iron, 2 grains of sulphate, or preferably the muriate of quinine, and $\frac{1}{60}$ to $\frac{1}{30}$ of a grain of arsenious acid, three times daily after meals. Of course, if the attack be severe, one should employ antispasmodic remedies, and also permit patients to smoke and inhale from a cigarette d'Espic, datura Tatula (Savoy and Moore), or of simple niter paper. As a last resort, the inhalation of a small quantity of

chloroform or a hypodermic of morphine and atropine may become our only satisfactory help. He was in accord with those who find in the constitutional conditions of gout and rheumatism an underlying influence of great power in causing nervous irritability and characteristic appearances of the throat, and where there is a clear history of these affections one may infer in many instances that the asthmatic attack is of similar origin. As to the reflex causes of asthma, when one finds in the nose and throat morbid conditions one cannot be satisfied with the care of the patient unless operative interference be undertaken to modify or remove these evidences of disease. While this is true, it should be admitted that several prominent throat specialists have exaggerated the diseased conditions of throat and nose as causative in producing asthmatic attacks.

In chronic gastric catarrh, brought on by errors of diet, or alcoholic habits, frequently lavage of the stomach and a regulated regimen have afforded great relief in the asthmatic seizures. In the consideration of bronchitic cases of asthma with some development of emphysema one is confronted with questions clinically most difficult to decide. When the bronchitis is clearly defined and the secretion slight, one's main effort should be to stimulate the latter by appropriate means, and here small repeated doses of ipecac, tartar emetic, grindelia robusta, chloride of ammonia, and iodide of potassium are very useful. Where the bronchitis is also evident and yet there is much bronchial secretion, belladonna or atropine must be combined in small or moderate doses with the drugs previously named, or should be given with a little camphor and quinine in capsule or tablet form, or what is often preferable, alone, until their physiologic effect is manifest. When the emphysema and bronchitis are clearly defined, and when the asthma is also pronounced, one must have recourse for temporary results to inhalation of the fumes of the antispasmodic cigarettes, the repeated use of oxygen gas, or the administration of Hoffman's anodyne, alcohol, hot coffee, capsules of ether, or chloroform. Where in connection with the previous conditions there is evident cardiac distension one must have recourse to nitro-glycerine or the nitrites, or to a soluble salt of caffeine (salicylate), either by the mouth or hypodermically. Occasionally blood-letting, by bleeding from the arm, or the use of leeches, or wet cups to the chest or epigastrium will afford more or less lasting relief. The question of change of locality is one difficult to solve. Personally, the speaker was inclined to believe, after considerable experience, that the climatic conditions which shall prove best for subacute or chronic bronchitis are also those best suited to the bronchitis when complicated with asthma.—*Medical News, September* 10, 1898.

DISEASES OF THE ORGANS OF DIGESTION.

49.—ON "THRUSH."

By Langford Symes, F.R.C.P. Dubl., Assistant Physician to the Dublin Orthopædic Hospital, &c.

In the decade ending with 1896 there died in Ireland 218 children under five years of age from this disease; 186 of these were infants under one year. It is therefore a disease of some morbidity, as it is of very great frequency. Thrush is a fungus or vegetable parasite which grows upon the buccal mucous membrane. It is contagious, communicable from child to child by nipples, spoons, or feeding-bottles, and, if favourably implanted in the epithelium, rapidly produces a luxuriant growth. It commences in the mouth, but has also spread to the pharynx, œsophagus, stomach, intestines, anus, genito-urinary, or respiratory mucous membranes. It is an outcome of artificial feeding, being rarely seen in breast-fed infants. Fowls and sucking calves have the same disease. It appears that it will not usually occur in a perfectly healthy mouth, but requires a soil favourable to its growth. In 1842 Professor Berg, of Stockholm, first communicated to the Swedish Society of Medicine his discovery of a cryptogamic vegetation in the deposit of thrush, and successfully proved it by transplantation. Henoch observed several members of one family take it simultaneously after using the same spoon or glass. Dr. Forbes Ross states he has directly produced thrush from the sour "must" of an unclean jug, from the fæces of some cases of diarrhœa, and from the scrapings of the skin of the nates. Most observers now incline to regard it as saccharomyces albicans, a special fungus of the yeast class. It most easily attacks weakly infants whose mouths are unclean and unhealthy. It may complicate any condition and be widespread, or merely a simple speck of vegetable growth. Some lesion in the mouth usually precedes it.

The clinical evidences of thrush are:—(1) *White specks of fungus in the mouth.*—Minute points like pin heads or little bits of curd, which may coalesce and extensively coat the mucous membrane. (2) *It is firmly adherent and difficult to detach.*—Not always elevated, and is creamy or greyish white. Seen on any part of the mouth. (3) *Inflammation of the mouth with acidity.*—Mucous membrane usually dry, hot, painful, and injected, with possibly rise of temperature. Reaction is usually acid. The child cannot suck with comfort. (4) *Diarrhœa with excoriation.*—There are often erythematous rashes and dermatitis on the buttocks and genitals.

The diagnosis may be obscured by :—(*a*) *Flocculi of milk curd.*—These, however, are easily detached and wiped away. (*b*) *Diphtheritic exudation* may speckle the gums or mouth ; but here the gravity of the illness will attract notice, and the pharynx reveal more extensive mischief. Under the microscope the growth consists of oval yeast cells united in long chains like a pearl necklace, sometimes growing into mycelial threads, which are really cylindrical cells ten or twenty times as long as their width, also there are seen epithelial cells and bacteria. The fungus can be cultivated in syrup, gelatine, potatoes, and bread paste. On the surface of the cultures it resembles a yeast, but at the bottom it is like a mould. The branching filaments are cells joined together 3 to 4 μ broad and 50 to 60 μ long. It has been seen in the ileum by Dr. Payne scattered all over its surface, but in a remarkable way avoiding Peyer's patches. E. Wagner states that it has actually entered the circulation, causing cerebral embolism. It is easily cured if localised and within reach. Its danger chiefly arises from its fermentative properties. It ferments sugar slightly. It decomposes milk, and, according to some, produces lactic, butyric, and formic acids. Its ferment acts on the contents of the alimentary canal more than on its tissue, and thus produces diarrhœa of an infective or fermentative character. Therefore, so potent a cause of so fatal a disorder must be regarded with horror, and quickly eradicated from the mouth of its host.

Treatment.—Remove it instantly with a dry cloth or rag, which should be burnt at once. After the mouth is wiped apply some antiseptic, the best of these are perhaps :—Borax.—Apply the glycerine of borax freely with a hair pencil or cotton wool mop. Also it should be given internally, and is of the greatest use. The following are also suitable :—Chlorate of potash ; carbolic acid in weak solution ; boroglyceride ; sodium salicylas ; permanganate of potash ; peroxide of hydrogen, 2 or 5 per cent. solution ; benzoate of soda. The diet must be investigated and all apparatus most scrupulously cleansed. It is advisable to increase the amount of cream in the food. Keep the child warm, with its nutrition and body heat well up to a high standard. Absolute cleanliness of the child's mouth, feeding bottles, and spoons is imperative. Recollect it is a "dirt disease," and if cleanliness were properly observed in health these fungoid growths would never appear. Intestinal troubles will necessitate drugs to arrest fermentation, such as calomel, resorcin, &c. After each feeding, the mouth must be thoroughly cleansed by some weak alkaline antiseptic lotion with a soft mop or paint brush. In all these affections of the mouth in young children honey must be scrupulously avoided. It formerly was much used combined with borax, but it ferments

easily, is very irritating, and is here mentioned only that it may be condemned. If a child in one bed has thrush or parasitic stomatitis, it must be scrupulously disinfected and completely isolated from its fellow in the next.—*The Medical Press, September* 28, 1898.

50.—TRANSILLUMINATION OF THE STOMACH.

By Chas. D. Aaron, M.D., Instructor in Materia Medica in the Detroit College of Medicine, Detroit, Mich.

[The following is taken from Dr. Aaron's interesting paper. The illustrations have been omitted here.]

The author does not contend that transillumination by itself is all-sufficient in the diagnosis of stomach diseases; all that he means to claim is that transillumination has a certain value as a form of supplementary help. Of the many methods of determining the situation of the stomach, transillumination appears to be the simplest and the most valuable. Einhorn's gastrodiaphane consists of a soft-rubber stomach tube supplied with an incandescent light; inside of the tube are wires which are connected with a storage battery. This tube is introduced into the stomach just as a regular stomach tube. Under the bright glow of the lamp the stomach forms a lantern, and on account of the translucent tissue the outlines of the stomach are readily visible. Since Einhorn introduced transillumination of the stomach it has come into practise in Russia, Germany, France, and, in fact, in nearly every country of the world.

The following items should be observed in the transillumination of the stomach:—(1) The stomach should be thoroughly cleansed of all remains of food before transillumination is attempted. (2) The bowels must be thoroughly evacuated, and the bladder emptied. (3) Transillumination is to take place in a darkened room. (4) The intensity of light should not be above four candle-power. (5) The light should not be turned on until the gastrodiaphane has been introduced into the stomach. (6) Transillumination can be performed in both erect and lying postures. (7) It must be remembered that in the lying posture the light falls away from the anterior abdominal wall, and at times the results are not as good as those obtained in the erect posture. (8) Fat produces refraction of light, and this may mislead. (9) The thinner the abdominal walls of the patient are, the more reliable is the result. (10) By slowly moving the lamp the boundaries of the stomach are recognised. (11) The transilluminated zone has for its upper border the right and left lobes of the liver; these prevent the light from passing through. (12) The transilluminated stomach in the normal person moves during respiration.

On illuminating the normal stomach, the fundus of the stomach conforms to the concavity of the diaphragm. Five-sixths of the stomach is to the left of the median line, only one-sixth is to the right of it. The highest point of the stomach is the fundus, and reaches to the level of the ninth dorsal vertebra. The small curvature is entirely covered by the liver and is visible only when the stomach is out of position. The pylorus is covered by the right lobe of the liver. The antrum pylori goes farther to the right than the pylorus. Gastroptosis is a condition in which the stomach lies lower than its normal position in the abdominal cavity—in other words, the stomach has fallen from its normal position and may reach anywhere and as low as the symphysis. We are indebted for the term "gastroptosis" to Glénard, who was also first to describe the disease. It is usually associated with dislocations of sections of the intestines and of other organs within the abdominal cavity. The fact that we can recognise the small curvature of the stomach by transillumination is a helpful element in the diagnosis of gastroptosis. As said before, the small curvature can normally not be seen, and is visible only when the stomach is displaced. When the stomach with all its upper parts has sunk *in toto*, even with the cardia, the small curvature and pylorus, the stomach, of course, has lost its area of contact with the diaphragm, and, therefore, shows no respiratory displacement such as the normal stomach has. Transillumination gives characteristic data in all cases of gastroptosis.

Dilatation is an enlargement of the stomach. It takes place usually at the expense of the greater curvature. The smaller curvature is usually in its normal position, while the greater curvature may reach anywhere from the navel to the symphysis. The small curvature cannot be seen when the organ is illuminated, for the upper part is covered by the liver, as in the normal stomach. This point is very valuable in the differentiation between dilatation and gastroptosis. The stomach moves during respiration; it does not in gastroptosis. The connection of the stomach and diaphragm is not impaired, as we found it in gastroptosis, hence there is a respiratory displacement. Dilatation must not be confounded with atony of the stomach. Atony designates a condition in which the muscular action of the organ is retarded and weakened, while dilatation refers to the enlargement of the dimensions of the stomach.

In a vertical stomach.—The stomach is in a vertical position. This is due to the falling of the pylorus to the left of its normal position. The diagnostic point of value in these cases is found in the fact that the seat of pain which the patients complain of as being in the stomach is found by transillumination to be outside of it. *In cancer of the pylorus.*—When the stomach is

illuminated, we discover a dark or black zone toward the right. This is due to the obstruction of passage of light, and we may regard it as suggestive of cancer of the pylorus. Inasmuch as dilatation can be made out by transillumination, and dilatation always attends a cancer of the pylorus with a stenosis, the coincidence of the dark zone with dilatation is very suggestive. *In cancer of the fundus.*—Here we recognise a dark zone on the left and a translucent region around it. The stomach is usually small in these cases.

Cancer of the interior wall of the stomach can always be made out by the illumination of the organ. It is evidenced by a dark central zone with a translucent area around it. The dark zone is produced by a thickening of the anterior wall. Since light is not transmitted at that spot, but rays penetrate all around it, a dark shaded area with a luminous zone is produced. When the cardia and fundus itself are involved, one-half of the stomach is dark, and the part not involved is transilluminated. The following are the results obtained from illuminating a pathological stomach :—(1) We can determine the precise position of the stomach. (2) The size of the stomach can be positively made out. (3) Dilatation can be readily seen. (4) Gastroptosis can be made out. (5) The respiratory displacement of the stomach can be observed. This is a valuable point in the differentiation between dilatation and gastroptosis. (6) A vertical and a loop-shaped stomach are recognisable. (7) We may get information with regard to the transparency of the stomach ; this is very valuable, for we can make out the probability of a tumour which otherwise may not be provable. For the rays penetrate translucent tissues, and when there is a thickening of the anterior wall of the stomach due to a growth, the light is retarded at that spot. All this, of course, under constant reference to all other methods of examination. (8) We may also be informed as to the tumours of the lower border of the liver and of enlargements and dislocations of the spleen. (9) All other methods for diagnosis may be employed, for transillumination does not replace them ; it is a valuable adjuvant to them.—*Medical Age, June* 10, 1898.

51.—DIAGNOSIS OF GASTROPTOSIS.

By Dr. A. Symons Eccles.

The author offers a valuable paper on this subject in a recent number of the *West London Medical Journal.* It is a matter which has of late attracted a large share of attention, and it is

desirable that as many carefully reported cases as possible be put on record, that we may arrive at a just conception of its true significance in relation to other disturbances, notably those occurring in the nervous system. Dr. Eccles alludes to twenty-seven patients, of whom eight were males and nineteen females. The ages of the men ranged from 32 to 61 years, while of the nineteen females the eldest was 45 and the youngest 9. In three other males and six other females nephroptosis was co-existent, eight of the right kidney and one of the left. Methods of examination are varied and somewhat complicated. The more important points we reproduce in the writer's words:—

"Inspection in different attitudes, palpation in the recumbent, tilted up, lateral and erect postures, and sometimes in the prone position, or with the patient resting on the hands and knees; then percussion both direct, without the intervention of the passive finger and with it, has appeared to me to be more useful than so cautious an observer as Prof. Clifford Allbutt seems to have found it. Again, I believe that ausculto-palpation has been very instructive to me in confirming the diagnosis of visceral displacements and dimensions. While the stethoscope is poised lightly on the abdominal wall, I use both hands to palpate, press on, or stroke the abdominal and hypochondriac walls, and I rarely find that the dimensions mapped out by this plan are not confirmed by percussion and *vice versa*. Moreover, to test the accuracy of the ear, I often shut my eyes so that I cannot see the marks already made by the flesh pencil as the result of one or other of the means employed. Tapping lightly, very gently indeed with the tip of the semi-flexed finger in a somewhat staccato fashion, is also a favourite practice of mine in examining the abdomen. If then I were asked, What are the physical signs and symptoms of gastroptosis? I should say that on inspection in the recumbent position the natural convexity of the epigastric region was lost, and in place thereof there is a marked concavity between the costo-chondral arches from the xiphoid cartilage almost as low down as the navel, sometimes below this point; there may also be a median sulcus intensified above by the narrowing of the space between the right and left rib cartilages, its shape being more that of an inverted Y than an inverted V. The whole abdomen may be more or less flattened, with bulging of the flanks; and in the erect posture the depression over the epigastric region is still more marked, while the umbilical and especially the hypogastric regions are unduly prominent, but not so distinctly pendulous as in cases of general enteroptosis."—*Boston Medical and Surgical Journal*, *July* 28, 1898.

52.—DIET IN HYPERACIDITY.

Many efforts have been made recently to throw light upon various stomach diseases by an investigation into gastric chemistry. The main object of these researches has been to evolve through a better understanding of the diseases themselves a more satisfactory and rational treatment, both dietetic and other. It is only too patent that the labelling of a case as dyspepsia only brings one to the threshold of the inquiry, as this term should signify nothing more than a symptom complex caused by gastric disease. It is equally clear that the treatment, dietetic or other, must be haphazard if the efficiency with which the stomach discharges its functions in the case in question is unknown. Notwithstanding this, the methods of investigating gastric chemistry have found little favour in this country, and therefore it is more than probable that cases of hyperacidity are passed by unnoticed. Almost *pari passu* with the above-named researches, and in some sense dependent upon them, much investigation has been made into the general metabolism of the body. By ascertaining the input, and carefully comparing it with the output, it becomes possible to find out to what extent the various constituents of the food are utilised by the body. To such an extent has this subject been advanced, that in not a few clinics abroad the investigation of metabolism is looked upon as almost a routine necessity in certain cases. At any rate it is obvious that if the functions of the stomach both secretory and motor be known, and the methods of treatment dietetic and other be carefully controlled by an investigation into the metabolism of the body, some valuable information should be forthcoming. H. Strauss and L. Aldor (*Zeitschrift für diätetische und physikalische Therapie*, Bd. i, Hf. 2, S. 117) have made such a research in regard to diet in hyperacidity due to the excess of free hydrochloric acid. There has been a difference of opinion among authorities upon the question of diet in hyperchlorhydria. Some have thought that a diet chiefly nitrogenous was indicated, but on the other hand this diet irritates the stomach and should thus aggravate the disease. Other well-known physicians have even advocated the presence of a considerable amount of carbohydrates in the dietary. Against this view must be placed the fact that a relatively rich deposit of starchy material is found in the contents of the stomach obtained after the test meal given to those suffering from hyperacidity. Strauss and Aldor believe that the problem is to be solved by reducing the carbohydrates, while at the same time providing a sufficiency of substances free from nitrogen. The replacement of ordinary starchy food stuffs by those in solution will not satisfy the requirements.

The damage done to the total metabolism in hyperacidity is well recognised and is evidenced by the deficient nutrition of such patients. The authors maintain that the desired end may be attained by introducing an abundant amount of fat into the diet. Dr. Strauss undertook a series of investigations upon patients suffering from various stomach affections, by which he was able to show that in the majority of cases the addition of a certain amount of oil to the dietary was followed by a diminution both in the total acidity as well as in the acidity due to free hydrochloric acid. It has been stated that fat impairs the motor functions and absorptive powers of the stomach, but even if this were to some extent correct, the patient is nevertheless thus provided with a quantity of combustible material which is only otherwise supplied with much difficulty. Having thus satisfied themselves on these points, the authors proceeded to test how far it would be possible to substitute fat for carbohydrates, and at the same time to maintain a rational mixture of nitrogenous and non-nitrogenous food stuffs. They made five investigations into four cases of hyperchlorhydria. The observations extended over five to eight days, during which period abundant fatty matters (125.5 g. in two and nearly 160 g. in three investigations) were added to the dietary, and the metabolism was most minutely investigated.

The subjective conditions of the patients, as well as the functions of the stomach, were also carefully noted. The tables appended in Strauss and Aldor's article show that the utilisation of both fatty and nitrogenous matters was extremely good. The patient's weight remained constant, or increased. The use of abundant fatty matters produced no unpleasant effects, for only in one case were there any dyspeptic symptoms, and these were very fleeting. The authors claim to have established the fact that in gastric hyperacidity there is a considerable toleration of fatty matters, and that if it is desired to improve the patient's nutrition fats must occupy a considerable place in the diet sheet. The fat used was obtained from milk, butter, cream, and oil; cream is especially to be recommended. A portion of the carbohydrates required should be supplied in a state of solution, but on the other hand attention is drawn to the fact proved by Strauss himself that oatmeal soup very quickly leaves the stomach of those suffering from considerable motor insufficiency both when the secretion of hydrochloric acid is normal and when it is increased. The subject deserves considerable attention, and if the investigations of Drs. Strauss and Aldor are confirmed by more extended clinical trials, these authors will have advanced our knowledge of the dietetic treatment of disease.—*From a leading article in the British Medical Journal, August* 13, 1898.

53.—GASTRIC SYPHILIS, WITH THE REPORT OF A CASE OF PERFORATING SYPHILITIC ULCER OF THE STOMACH.

By Simon Flexner, M.D., of Baltimore.

In August, 1892, Dr. Miller reported the patient, a man aged 49, as a large, fairly well-nourished man, about six feet in height, and weighing 170 pounds. His average weight was 200 pounds. His occupation was that of a showman. The first appearance of his illness was the preceding Christmas, while filling an engagement in Boston, and followed a drinking-bout and exposure. It was ushered in by a severe spell of vomiting, which persisted for several days, and was followed by irregular chills. This condition of affairs continued off and on until the summer, when I first saw him. At this time the temperature ranged around 101° F.; there was a tumour in the splenic region extending 9 cm. below the costal margin and forward nearly to the umbilicus. Exquisite tenderness was present all over the area of dullness. I regarded the tumour as being the enlarged spleen. The urine contained bile-pigment, and there was some pigmentation of the skin. Neither sugar nor albumen was found in the urine. There was little change in the conditions noted for several months, when the splenic tumour was found to have diminished markedly and ascites to have appeared. The dropsy increased, involving the legs and scrotum. The patient was tapped for the first time on April 20, 1893; three and one-half gallons of fluid were withdrawn. The tapping was repeated at intervals of six days to two weeks, the amount of fluid withdrawn varying from two to six gallons. The relief afforded by the paracentesis was so great that the operation was resorted to to enable the patient to go fishing the next day. The accumulation of fluid continued for two years, and then began to diminish until very little fluid could be detected in the abdomen. Purges were occasionally administered. The morphine habit was acquired. The night before his death the patient dined abundantly on fried crabs and ice-cream. When I saw him, a few hours before his death, there were intense abdominal pain and tympanites. Pulse thready, weak, 130 to the minute; profuse sweating. He died in the early morning. The patient had been in the hospital on two occasions, in February, 1893, and March, 1894, for examination. On his first entrance Dr. Hewetson found a full abdomen; no increase of liver dullness; the spleen enlarged and palpable three to four finger-breadths below the costal margin. When he returned in 1894 he reported having been tapped at intervals of about ten days, in all sixty-five times. After the removal of

9,700 c.cm. of fluid the liver could be felt below the ensiform cartilage; it was hard and apparently bound down by adhesions. A probable diagnosis of hepatic cirrhosis was made. The autopsy was performed eight hours after death on a warm day in June. The anatomical diagnosis was:—Old adhesions between liver, stomach, spleen, and pancreas. Large hepatic gumma. Syphilitic ulcer of the stomach with perforation. Acute diffuse, sero-fibrinous, and gaseous peritonitis. The omentum was greatly shortened, the small intestine contracted, and the general serous surfaces were thickened. The loops of the jejunum and ileum were particularly firm and rigid. The spleen was much enlarged, measuring 12 × 7 × 7 cm.; capsule opaque and cartilaginous. No gummata. It was bound firmly to the fundus of stomach and covered by the very closely adherent omentum. The latter structure contained little fat, appeared as a mass of tatters, and was gathered together at the left border of the stomach, with which organ and the spleen it was firmly united. In gently separating the adhesions in this region stomach-contents were seen to issue from a small opening in this organ. They agreed with the material found in the peritoneal cavity when it was first opened. The wall of the stomach in this situation was firm and board-like, and, on being dissected away from the spleen, was found thickened out of all proportion to the rest of the organ. The perforation had taken place below the splenic adhesion and at a point uncovered by complete omentum. On opening the much-contracted stomach the general mucous membrane presented a mammillated appearance, but in the fundus, 4 cm. from the œsophageal opening and occupying the greater curvature, a large ulcer, measuring 5 × 5 cm., was found. The base of this over most of the central part was the muscularis; the edges were thick, polypoid, and firm, and the perforation 15 × 3 mm. in size. Just about the perforation the tissues presented a greenish and necrotic appearance. The base of the ulcer is covered to some extent with mucous membrane, and only in its centre is it bare. The muscular coat is exposed in this part, and the more superficial fibres are quite necrotic. The elevated edges of the ulcer are clearly not the remains simply of the old mucosa and sub-mucosa. This is proven by comparison with the surrounding intact mucosa, which is much less elevated. The microscopical examination shows the thickening to be due to a new development of dense fibrous tissue.

There can, I think, be no doubt that the ulcer is of syphilitic origin; the character of the new tissue and the form of cell-death met with seem sufficient proof for this belief. But I think it much more improbable that it is due to the softening of a gumma. Indeed, I find very little evidence in support of

such a view. On the other hand, the appearance described speaks more for an indirect form of necrosis of the mucous membrane, brought about by the combined softening of the sub-mucous gummatous infiltration and the obstruction and obliteration of blood-vessels in the same situation. The mucous membrane thus deprived of its nutrition became necrotic, was removed, and the ulcer resulted. The sub-mucosa suffered either directly through necrosis of the infiltrating cells, or, again, indirectly, owing to the vascular changes combined with the action of bacteria. The clinical course of the disease is made clear by the autopsy findings. The splenic tumour and ascites were the result of the portal obstruction; the obstructing agent was the syphilitic tumour. It seems reasonable to suppose that the gumma was larger at one time than it was at the autopsy, and that the reduction of the ascites was owing to this change. The evidence for this might be found in the size of the left lobe of the liver, and is strengthened by the absence of a marked collateral circulation. The immediate cause of death was the perforation into the peritoneal cavity of the gastric ulcer in a part unprotected by adhesion with surrounding structures.—*From Dr. Flexner's paper in the American Journal of Medical Science, October*, 1898.

54.—LATENT CANCER OF THE STOMACH.

By Julius Friedenwald, A.B., A.M., M.D.,
Clinical Professor of Diseases of the Stomach, College of Physicians and Surgeons, Baltimore; and
A. S. Hotaling, M.D., Resident Physician, Bay View Hospital.

[From Dr. Hotaling's paper:]

The diagnosis of carcinoma of the stomach is at times very difficult. There are many cases in which the cardinal symptoms are absent, and yet the diagnosis can be made from other symptoms. There are other cases, however, in which not only are the cardinal symptoms entirely absent, but all other symptoms, if present at all, are so insignificant that they do not lead one even to suspect a carcinoma. Such cases are known as latent cancer of the stomach. There are two varieties of latent cancer:—First, those cases in which the gastric symptoms are absent or so insignificant that they are masked by other general symptoms. Thus the carcinoma may be masked by some intercurrent disease, or secondary metastases from a primary gastric carcinoma may hide the primary disease. Secondly, those cases in which there are no symptoms whatever, general or local. Of the first variety a large number of cases

have been reported; of the second the cases are few. The pathological conditions leading to latency are that the growth be located on the anterior or the posterior wall of the stomach in such a position as to involve neither the cardiac nor the pyloric orifice, and that the surface of the tumour do not become ulcerated. When either of these orifices is involved, symptoms of obstruction are at once manifested; if there is marked ulceration, toxic symptoms are produced. Latent cancers of the stomach have been observed by Cruveilhier and Barth, and cases have been reported from the clinics of Trousseau, Andral, and Guéneau de Mussy. Chesnel has reported six cases; three of these were masked by pregnancy. In another case, in a man who had died suddenly from apoplexy, a cancer of the stomach was discovered at the autopsy; in still another case presenting the clinical symptoms of Bright's disease, a similar discovery was made.

Raymond reported a case in which there were no gastric symptoms whatever; there were a sudden and very high elevation of temperature and a general and apparently eczematous eruption. The true condition was revealed at the autopsy. In another case, that of a man aged 56 years, the only symptoms were marked cachexia and general œdema. The autopsy revealed a large carcinoma of the walls of the stomach, not involving the orifices.

E. Brissaud relates a case of a man, aged 57 years, who entered the hospital suffering with intense anorexia; there was much emaciation, but neither vomiting nor any digestive disturbance. He continued in this condition for twenty-two days, when fever suddenly came on with intense pain in the chest. A purulent pleurisy was discovered; soon the joints became infected, and there were other manifestations of pyæmia. The patient died, and a large cancer of the lesser curvature of the stomach was discovered. Many of the joints were found filled with pus and the left pleura contained a large quantity of pus.

Brodeur reports a case, that of a man, aged 87 years, with a good antecedent history, who complained of loss of appetite, slight nausea, though not vomiting, and alternating constipation and diarrhœa. Œdema came on and he died. At the autopsy a large encephaloid carcinoma of the stomach was found, not involving the orifices, but the greater curvature of the stomach was entirely destroyed and its wall was replaced by the spleen; the left kidney and the liver were also involved. In spite of the extensive ulceration there had never been vomiting or hæmatemesis or pain. This case is remarkable as showing how far the destruction of the stomach may go without producing any marked symptoms.

An interesting case is reported by Goldscheider. A woman, aged 61 years, presented symptoms of a compression myelitis, the cause of which could not be determined. At the autopsy a carcinoma of the spinal column was discovered, which was secondary to a carcinoma of the lesser curvature of the stomach. In this case there were no symptoms whatever of gastric disturbance.

Hampeln reports a number of cases. In one the diagnosis of senile marasmus and arterio-sclerosis was made; in another pulmonary tuberculosis; in still another pernicious anæmia. In all of the cases carcinoma of the lesser curvature was found. In two febrile cases the diagnosis had been malaria and abscess of the liver.

Aron demonstrated before the Medical Association of Berlin a specimen of latent cancer of the stomach. The patient, a man aged 78 years, had become emaciated and had œdema of the face and extremities, ascites, and fluid in the pleural cavities. Nothing could be determined by examination except the existence of an enlarged liver. At the post-mortem examination a large ulcerated carcinoma was found involving the greater curvature of the stomach.

Leichtenstern reports three cases. In the first there was an acute compression of the spinal cord with paraplegia due to a secondary lesion in the stomach. This had not produced any gastric disturbance. In the second case the diagnosis of acute miliary tuberculosis had been made. There were ascites, abdominal pains, and symptoms of chronic peritonitis. At the autopsy miliary carcinosis of the peritoneum was discovered secondary to a primary scirrhous carcinoma on the posterior wall and greater curvature of the stomach. The third case was one of chronic nephritis. There was hypertrophy, but there were no gastric symptoms except occasional vomiting. The trouble was believed to be uræmic. The patient died of uræmia, and at the autopsy, besides the cardiac and renal lesions, a carcinoma on the lesser curvature of the stomach was discovered. Similar cases have been reported by other writers.

The case which we report is of considerable interest:—A. W——, coloured, aged 70 years, entered Bay View Asylum on March 15, 1897. He was in good general health, with an amount of arterio-sclerosis usual at that age. He at no time complained of feeling ill. On July 3 he died suddenly. The most interesting condition was found in the stomach. In the region of the lesser curvature, occupying both anterior and posterior walls, was a tumour mass sixteen by eleven centimetres, varying from one-half centimetre in thickness and projecting into the cavity of the stomach. The tumour was slightly pedunculated, the free edge of the tumour in places

overhanging the attached base as much as two centimetres. Nodular projections were scattered over the surface. There were two or three ulcerated areas on the surface of the tumour, from one to two centimetres in diameter. The mass extended into the cardiac orifice but did not involve it. Scattered over the mucosa of the stomach were a dozen small nodules one centimetre in diameter; some were pedunculated. The mass had extended through the muscular layer of the stomach. No evidence of metastases could be found in the neighbouring lymphatics. On section a considerable mass of fibrous tissue was visible. On pressure a white, pulpy material was expressed in the vicinity of the ulcer. The stomach was normal in size and position. Microscopically the tumour was found to be an adeno-carcinoma. The cylindrical cells lined the ducts very regularly in some places; in others the arrangement was very irregular and many of the cells had undergone necrosis. The ducts were separated by connective tissue, which showed considerable small-cell infiltration.—*Medical Record, Sept.* 24, 1898.

55.—GASTRIC TETANY.

By E. F. Trevelyan, B.Sc., M.D., M.R.C.P. Lond., Assistant Physician to the Leeds General Infirmary, &c.

[Only a part of this paper is included here.]

Tetany complicating gastric dilatation, is admittedly a rare disease, only some forty-five cases having been recorded, yet two such cases have been received into the Leeds General Infirmary within a period of little over a year.

Case 1, in a woman, aged 45, was rapidly fatal. The tetany supervened on a gastrectasis due to duodenal carcinoma. It has been urged that all cases of tonic spasm occurring in dilatation of the stomach are not to be called tetany. So distinguished an authority on tetany as Frankl Hochwart, writing in 1897, only recognises as genuine gastric tetany eleven out of some forty cases reported up to that time. The grounds, however, on which some of the cases have been excluded are not always obvious. The advantages of distinguishing between gastric tetany and gastric dilatation with tetanoid spasm are not altogether apparent unless it can be shown that the two conditions differ in cause as well as in symptoms. It certainly seems convenient to include under the name of gastric tetany, as most writers do, at least all cases of gastric dilatation complicated with such tonic spasm in the extremities as is seen in ordinary tetany. If

the classification given in Bouveret and Devic's paper be accepted, the above recorded case would fall into the second group, where the spasm of the extremities is also accompanied by tonic spasm in the muscles of the face and neck or trunk. The rapidity with which death may occur in this disease is well illustrated by Case 1. In a very few instances a long interval of comparative health had separated previous attacks of tetany. Although there had been dyspeptic symptoms for many years, yet the gastric dilatation leading to the tetany had probably not existed more than a few weeks. The reason that dyspeptic symptoms have usually been noted for many years previously is because by far the most frequent cause of gastrectasis complicated by tetany is cicatrisation of an ulcer. Severe vomiting has been almost a constant precursor of gastric tetany, and has been immediately preceded by tingling in the extremities. The vomiting, but not the tingling, was present in this case. Albuminuria was noted here, as in several other recorded cases. There was no particular thirst. The temperature fell during the attack to 96·4°. Often a rise and not a fall of temperature has been noted; in Collier's cases it reached 109° before death. The patient resembled in many respects one dying from acute abdominal disease, consciousness being maintained to the end. The embarrassment of respiration so frequently observed in gastric tetany was absent. In by far the large majority of the cases, as mentioned above, the gastrectasis has been the result of the cicatrisation of an ulcer. Attention has been drawn by more than one writer to the comparative frequency with which a duodenal ulcer has been found in gastric tetany. More frequently still the pyloric ulcer has extended into the duodenum. In another group of cases the cause leading to obstruction of the duodenum has operated from without.

Case 2, also rapidly fatal, occurred in a woman, aged 60. There was also malignant disease of the ovary and pancreas. The case is interesting from two points of view—namely, (1) the entire absence of any disease of the stomach itself or duodenum to account for the gastric dilatation and (2) the presence of renal disease. The dilatation could not have been due to the malignant disease of the pancreas, for the head of this organ was quite healthy. I am inclined to think that it was caused by an anchoring of the pylorus or duodenum through adhesions. In the case reported by Holman the stomach was much dilated, but there was also no sign of ulceration, past or present. In de Beaurmann's case, quoted by Fenwick, the dilatation is said to have been atonic. Singer, in the Vienna Medical Club, stated that dilatation of the stomach is not always present in cases of gastric tetany, but often only an atony; no cases are given in support of this view. In Merlin's case, quoted by

Sievers, there were dilatation of the stomach and hemorrhages and erosions in the mucous membrane of the stomach and duodenum. It has been very properly suggested that any satisfactory explanation of the etiology of gastric tetany must take cognisance of the frequent occurrence of ulcers wholly or partially cicatrised. Bouveret and Devic thought they had discovered the connecting link between gastric tetany and a cicatrised ulcer in the hyperchlorhydria frequently associated with gastric ulcer. Excess of hydrochloric acid has certainly also been found in gastric tetany by Gumprecht and Thiroloix, and Du Pasquin. On the other hand, there are cases of gastric tetany on record in which free hydrochloric acid has been absent from the gastric contents. Thus, if Bouveret and Devic's views are correct as regards some cases, they certainly are not so for all. Of the three or more theories put forward to explain the origin of gastric tetany, the auto-intoxication theory has very rightly found the widest acceptance. Neither the loss of fluid to the body, nor yet the reflex theory, offers a satisfactory explanation. However plausible and probable the auto-intoxication theory is, it cannot as yet be looked upon as having been definitely established by experiment. In not a few cases of gastric tetany, albuminuria has been noted. In some of these cases the kidneys have been found healthy after death, at least so far as the naked-eye appearances were concerned, but in others there has been chronic renal disease. If tetany is due to a poison excreted by the kidneys, then anything which would render the kidneys less efficient excretory organs should precipitate the attack of tetany. Frankl Hochwart has specially drawn attention to the question of season and tetany, and Gumbrecht says that 75 per cent. of the cases of gastric tetany occur from January to March, the months in which ordinary tetany is most common. The figures as regards gastric tetany are certainly too small to base any conclusions upon. The greatest frequency of tetany at a given time of the year, epidemic outbreaks of the disease, its occurrence as a complication of infective illnesses, the frequent rise of temperature noted, and other facts, have been appealed to in support of an infective origin. A question of some importance arises as to whether tetany may occur in connection with gastric disease other than dilatation. Max Einhorn and some other writers accept this view. Schlesinger, in the Vienna Medical Club, reported a case in a woman, aged 35 years, which occurred in connection with an acute gastro-enteritis caused by eating contaminated sausage. The same writer drew attention to an almost unknown form of tetany, which he described as chronic benign tetany of gastric origin. Perhaps Case 3 falls into this category.

Case 3, in a girl, aged 18, ended in complete recovery. The attacks recurred on and off during six years. They followed severe vomiting, but there was no evidence of gastric dilatation. The chief interest in this case is the systematic occurrence of the attacks of tetany after severe vomiting. It is this fact, together with the long period of time over which the attacks were observed, which separates the case from ordinary tetany. Of course, gastro-intestinal symptoms are not uncommon in tetany of children, but the regular association of the vomiting and tetany is, I take it, a different matter. The diagnosis of gastric tetany is mostly quite easy. If the term "gastric tetany" is allowed to include the milder as well as the severer cases, and there is no sufficient reason against this view, then the disease may turn out to be more common than is usually supposed. The transition between gastric tetany strictly so-called, tetany with gastro-intestinal symptoms, and ordinary tetany would seem to be a gradual one. The prognosis of tetany occurring in gastric dilatation is undoubtedly very serious; nearly 75 per cent. of the cases die. The largest mortality occurs in the groups 2 and 3 referred to above, that is, where the spasm in the extremities is associated with tonic spasm in the head and trunk muscles or with clonic spasm.

After what has been said under the prognosis, it may be thought that little need be added about the treatment of gastric tetany, yet in some cases, and notably one by Blazicek, the fatal issue was warded off for a time by systematically washing out the stomach. On the other hand, as mentioned above, the tetany itself has been ascribed to the stomach-tube, and undoubtedly the paroxysm has sometimes followed almost immediately upon its use. With the soft tube now in general use the risk of provoking an attack should be reduced to a minimum. Before the stomach is emptied it is perhaps well to supply fluid to the body in the form of saline injections into the rectum or subcutaneous infusion. In my case the stomach was thoroughly washed out, sterilised saline solution being used for the purpose as soon as the wash-water became clear. In some quarters it has been strongly stated, perhaps rather from theoretical considerations, that alcohol should be avoided in gastric dilatation. Other authorities have, perhaps, more correctly stated it when they say that alcohol should be avoided if it is found in the stomach some time after it has been taken. Penzoldt says that the treatment should aim chiefly at avoiding the occurrence of this fatal disease. He draws attention to the fact that Boas recommends diuresis. Rectal injections of milk are also mentioned by Penzoldt, otherwise the treatment is symptomatic. If the tetany ceases and the general condition of the patient permits of it an attempt should, perhaps, be made to

do away with the gastric retention by pyloroplasty, gastro-enterostomy, or pylorectomy. A pylorectomy was performed in Gumprecht's case some time after the last attack of tetany, but unfortunately the patient after doing well for a few days died from peritonitis.—*The Lancet, September* 24, 1898.

56.—GASTRO-INTESTINAL HEMORRHAGE IN A NEWLY-BORN CHILD.

By L. A. Parry, M.D., B.S. Lond., F.R.C.S. Eng., Honorary Physician to the St. Pancras and Northern Dispensary.

[The case was treated by large doses of calcium chloride, and recovered.]

The child who is the subject of this paper was the first off-spring of perfectly healthy parents. There was no family history of hæmophilia and the only point of note as regards the labour is that forceps were used when the head was quite low down in the pelvis as there was some delay in the birth. The puerperal period of the mother was quite normal, but it may be noted that her pulse kept well above 100 per minute for the first week, although the temperature never rose above 99·2° F after the first day. During the first three days of the child's life no unusual symptoms were observed. On the fourth day, however, almost exactly seventy-two hours after the birth, the infant vomited some dark reddish-brown blood, and three hours later passed a motion of the same colour, another motion in two hours, and another again two hours afterwards—*i.e.*, blood was vomited once and three motions of blood were passed during the day, the first being at twelve midday. The amount of blood on each occasion was not great, but it left the patient in a rather anæmic condition. On the next day there was no hæmatemesis. The child was sick once or twice after taking medicine, but there was no blood. Four more motions of blood of about the same amount as the day before were passed, and the infant was very anæmic and feeble indeed. On the next day there was no repetition of the hæmatemesis, but there were four more motions of blood, considerably less, however, in amount. After this no more blood was passed, and the child rapidly convalesced from the resulting anæmia.

The diagnosis of the cause of gastro-intestinal hemorrhage in newly-born infants is not as a rule difficult. The conditions which may give rise to it are as follows:—(*a*) There may be hemorrhage into the bowel caused by pressure at birth, just as there may be hemorrhage into other viscera, such as the brain

or lungs. It may even be of sufficient amount to cause intestinal obstruction. In my case this explanation was negatived by the fact that the child passed ordinary motions for the first two days of life. This could not have been the case if there were blood in the bowel at birth, for it would certainly have shown itself at the latest at least after one or two motions had been passed. (*b*) There may be acute fatty degeneration of the newly-born. Buhl, in 1861, first described this rare disease, but it is very doubtful whether it is really a definite disease at all. The symptoms are as follows. The child is born in a state of asphyxia without obvious cause. There are cyanosis, blood extravasation under the skin or mucous membrane of the mouth or conjunctiva, jaundice, general œdema, hemorrhage during the separation of the cord or from the stomach and bowels, and death occurs in two weeks. As all these symptoms, except the gastro-intestinal hemorrhage, were absent this was not a case of this disease. (*c*) There may be hæmophilia, but there was no family history of this, nor was there any other hemorrhagic tendency in the child beyond that described, *e.g.*, the cord separated without any bleeding. (*d*) Vomiting and the passage *per rectum* of swallowed blood either from the mother's nipple or from some lesion of the child's mouth or nose may occur, but in this case there was nothing of the kind present. (*e*) There may be ulceration of the duodenum or stomach, as described by Dr. Goodhart and others. In that case hæmatemesis would have been a more pronounced symptom than it was in my case, where it only occurred once. These cases are always fatal. (*f*) Intussusception may occur, but then there would be no hemorrhage from the stomach, and a tumour would be present, and mucus as well as blood would have been found in the stools. (*g*) Congestion of pelvic veins due to a cessation of the circulation in the cord when it was tied might have been another condition, but then the hemorrhage would have come on directly after birth and would have been accompanied by discharge of blood *per vaginam* from the same cause—*i.e.*, pelvic congestion. Lastly, there may be (*h*) hæmatemesis and melæna neonatorum, and this is the class in which I place this case. The symptoms are simply those which are implied in the name—the passage of blood by the rectum and the vomiting of it in newly-born children. The pathology in this condition is obscure ; the necropsy in these cases simply reveals a very much congested condition of the gastro-intestinal mucous membrane without any discoverable cause. Sometimes even this congestion is not seen and no abnormality whatever can be found.

The usual treatment of such cases is by the administration of hæmostatics, such as ergot, perchloride of iron, &c., but the majority prove fatal in spite of all attempted remedies. I gave

my patient very frequent 5-grain doses of calcium chloride. On the first day of the bleeding none was given; on the second day eight doses of 5 grains were administered every hour through the day and then every two hours through the night; on the third day the same; and on the fourth day every two hours through the day. The drug was then stopped as the bleeding had ceased for twenty-four hours. Altogether the child took 160 grains in three days. The hemorrhage began to lessen twenty-four hours after its exhibition, and ceased completely in forty-eight hours. The resulting anæmia was treated in the usual way by the administration of iron. A practical point to note is this. I warned the mother not to worry if the stools turned black-coloured, and it was just as well I did, for she said she would certainly have thought the colour, which was due to the taking of the iron, arose from a recurrence of the bleeding unless she had been prepared. I cannot say whether the stoppage of hemorrhage was post or propter the giving of the calcium chloride, but certainly the bleeding ceased soon after its exhibition, and I should use it again in a similar case. I have often tried it in other forms of hemorrhage—*e.g.*, epistaxis, bleeding from tooth socket, &c.—but this is the first case in which I have seen any benefit after its employment. —*The Lancet, July* 16, 1898.

57.—A CASE OF ACUTE STREPTOCOCCAL ENTERITIS.

By W. C. C. Pakes, L.R.C.P. Lond., M.R.C.S. Eng., D.Ph.; and

J. W. Washbourn, M.D., F.R.C.P.

The case we are about to describe is of interest on account of its resemblance to cases of so-called ptomaine poisoning. We are indebted to Dr. J. W. F. Jewell, of Balham, who had charge of the patient, for the following history of the case :—

Clinical History.—A gentleman travelled by train from Scotland to London. On the journey he partook of tinned fruit, and was seized, some six hours later, with vague pains in the abdomen. The pains gradually increased, and in fifteen hours after the first symptoms intense diarrhœa and vomiting supervened. When first seen by Dr. Jewell, twenty-five hours after the onset, he was completely collapsed, but conscious, and complained of agonising pain in the abdomen and over the region of the heart. The pulse was scarcely perceptible and the heart sounds were almost inaudible, the respirations 60 a minute, the lips blue, the face congested, the temperature in the groin was 105°. Brandy and milk were administered by the mouth, and $\frac{1}{3}$ gr. of morphine was given hypodermically. In about half an hour the sickness and diarrhœa stopped and the pain in the abdomen was relieved. Injections of strychnine and

digitalis revived the pulse, and the cyanosis was relieved by inhalations of oxygen. About an hour and a half before death he suddenly got worse, and although transfusion with saline solution revived him for a time, he gradually became unconscious, and died thirty hours after the first onset of the symptoms.

Necropsy.—A post-mortem examination, at which one of us was present, was made by Dr. Jewell ten hours after death. About two pints of turbid fluid were found in the peritoneal cavity. The mucous membrane of the stomach was slightly congested, but not more than could be accounted for by the constant vomiting. The mucous membrane of the first four feet of the small intestine was deeply congested and œdematous, and was blackened in patches. The intestines contained a moderate amount of liquid material. There was hypostatic congestion of the lungs, and the endocardium was blood-stained. The rest of the organs appeared quite normal. There was no wound or abrasion in the skin, with the exception of minute punctures produced by subcutaneous injections. Specimens of the heart blood, the peritoneal fluid, the liver, and the wall and contents of the first part of the small intestine, were collected in sterile tubes under the usual aseptic precautions.

Microscopical Examination.—The intestinal contents were examined microscopically, and showed a large number of streptococci in addition to other bacteria. The juice from the wall of the affected portion of the small intestine was examined microscopically, and showed a moderate number of streptococci, but no other bacteria. The heart blood showed, on microscopical examination, a large number of cocci in chains and pairs, and a few large bacilli. Inoculations were made in broth, on the surface of agar, and in the depth of glucose-gelatine. In all the tubes pure cultivations of streptococci were obtained. The juice from the liver showed, on microscopical examination, many cocci in chains and in pairs, and a few large bacilli. Inoculations were made in broth, on the surface of agar, and in the depth of glucose-gelatine. In all the tubes pure cultivations of streptococci were obtained. The peritoneal fluid showed, on microscopical examination, a few bacilli, but no cocci. Inoculations were made in broth, on the surface of agar, and in the depth of glucose-gelatine. In all the tubes cultivations of the bacillus coli were obtained. Sections of the small intestine showed the presence of diplococci and streptococci.

Inoculation Experiments.—The streptococcus isolated from the liver and heart blood was cultivated upon various media, and gave all the characters of the streptococcus pyogenes. A mouse inoculated subcutaneously with ½ c.cm. of a broth cultivation died in three days with streptococci in the blood and organs. Another mouse fed upon bread soaked in a broth cultivation was not affected. A rabbit and a guinea-pig, inoculated with 1 c.cm. of a broth cultivation, suffered from transient œdema at the seat of inoculation, from which they recovered.

Remarks.—In this case the symptoms were those that are usually attributed to ptomaine poisoning, that is to say, to the ingestion of toxic products of bacteria. The bacteriological examination pointed to an actual infection with streptococci starting in the wall of the jejunum. They were found in large numbers in the intestinal contents, in the tissues of the inflamed portion of intestine, in the blood of the heart, and in the liver. The streptococcus, as far as morphological and cultural characters were concerned, was similar to the streptococcus pyogenes; it

was pathogenic to mice on subcutaneous inoculation, and produced transient local lesions in a rabbit and guinea-pig. The bacillus, which in addition to the streptococcus was found in small numbers in the blood and liver, was probably an anaërobic putrefactive bacillus growing only at the temperature of the body. It did not grow in broth or on agar at 37° C., nor in the depth of glucose-gelatine at 20° C.

Booker, in an investigation into the causation of infantile diarrhœa, attributes some of the cases to infection with a streptococcus. Tonarelli describes a form of enteritis with typhoid-like symptoms caused by a streptococcus. The introduction of cultivations of this streptococcus into the stomach of rabbits, after previous alkalinisation of the contents, caused diarrhœa followed by death. At the post-mortem examination a blood-stained serous exudation was found in the peritoneal cavity, and there was hyperæmia of the mucous membrane of the intestine without ulceration. Streptococci were present in the exudation and in all the organs. Hirsch describes a fatal case of diarrhœa in a child in which streptococci were present in large numbers in the fæces during life, and were found in the heart blood and in the organs after death. The streptococcus isolated was difficult to cultivate, and would not grow on ordinary broth or gelatine. It was pathogenic to white mice. Tavel and Equet and de Cérenville have also ascribed cases of enteritis to the presence of a streptococcus.—*The British Medical Journal*, *June* 18, 1898.

58.—OXYURIS VERMICULARIS.

By W. Thornton Parker, M.D.

[From Dr. Parker's paper :]

The oxyuris vermicularis is an exceedingly troublesome parasite, and although generally supposed to be quite harmless, is nevertheless capable of creating considerable damage to health, and, in the writer's experience at least, has more than once been more or less the direct cause of death. In Dr. Keating's "Cyclopædia of the Diseases of Children," he states that "there are no really dangerous conditions produced by the oxyuris." This may be, generally speaking, a correct statement, so far as practice in our cities and towns is concerned, but in rural districts and among ignorant and careless people a very serious condition results when rational treatment has been neglected. While stationed among the Chippewa Indians, at White Earth Reservation, Minnesota, I found it in more than one instance quite impossible to save the lives of little children suffering from debility and convulsions resulting from the presence of enormous

numbers of these parasites in the intestinal canal. They are certainly not identical with any worm outside the body. They are most commonly met with in children of the poorer classes, who are improperly fed, but we find that all children, and even adults, are liable to contain such parasites. The children of tourists in Europe, and not infrequently the tourists themselves, suffer from these annoying parasites. The children of Reservation Indians, who have departed from the old-time normal life which we are pleased to regard as savage, these suffer very much from such parasites.

Indian cabins are built conveniently near the lakes and other natural water supplies. The old-time use of natural water courses was well enough when camping grounds were often changed, but when the Indians remained year after year near the same lakes and ponds the water supply easily became contaminated. At such places it is customary for them to obtain the necessary water supply by wading out perhaps a few feet from shore, a little over their moccasins, and dipping up with a pail what is required. This is done at infrequent and usually long intervals. The borders of these lakes are overgrown with reeds and bushes, around which the water is shallow, stale, and filled with decaying animal and vegetable matter. After carrying to the cabin, the pail is left usually uncovered in the most convenient place, not always the best ventilated. Besides this inferior water supply, the wholesome venison and Indian maize has given place to salt pork, poor meat, and doughy bread, making a combination of food not conducive to health.

Anæmia, scrofula, tuberculosis, and many other diseases which are new to our aborigines are fast decimating the once powerful tribes. It is not to be wondered at that intestinal derangements and parasitic disorders are observable among the children of the "modern Indian." I have seen them profoundly sick with pin worms. The oxyuris vermicularis is in its maturity about one-sixth of an inch in length, and is of a bright, white colour, and exceedingly hardy. The eggs are deposited in the mucus and on the mucous membrane of the rectum. The development of these parasites is most rapid, and although large quantities may be expelled and a cure supposed to have resulted, a few remaining worms will rapidly renew the place of those which have been removed. The symptoms of this condition are well known. There is troublesome irritation of the anus, with itching and burning, and even pain extending to the genitals. These symptoms are especially observable at night when the patient is warm in bed, and reflexly these symptoms may give rise to every kind of irritation of the intestinal tube and to sympathetic disturbance of almost every function. Commonly we find restlessness, peevishness, in some cases amounting to violent

ill-temper. There is also in most cases itching of the nose, involuntary twitchings, grinding of the teeth during sleep and even in the waking hours. Chorea and convulsions are not infrequently induced by this condition, and even epileptiform seizures have been attributed to this cause. The itching and burning are often the exciting cause leading to the habit of masturbation, more especially in little girls. The pruritus in the latter is followed by decided leucorrhœa, and in older girls and those approaching puberty, various forms of hysteria are observable. Marked anæmia is very apt to be present. Anorexia and morbid and ravenous appetite is frequently observable. Either diarrhœa or constipation, as an intestinal derangement, arising therefrom, is to be expected. In those who are suffering from the presence of worms the breath is foul and the stools are apt to be fœtid and mixed with large quantities of mucus. The worms not only pass out in the stools but creep out and can be found in the folds of the skin near the anus. In little girls they pass into the vagina and sometimes set up serious inflammation. The mucous membrane of the rectum is usually more or less congested.

In the treatment of this disease we must carefully wash out the bowel either with pure tepid water or with some antiseptic like boroglyceride in a 10 or 20 per cent. solution. Once or twice a week an aperient should be administered, a half hour before breakfast, and after the bowels have moved a suppository of boroglyceride and gelatine should be inserted. These suppositories can be used by day as well as by night, the patient wearing a protecting napkin. The treatment must be continued for several weeks. Where a reasonable relief is not obtained by aperients, injections, and suppositories, solutions of the sulphate of quinine :—Grs. 2.4.6. to water ℥i may be given in teaspoonful doses every four or six hours p.r.n. The control of this aggravating trouble is often followed by very decided improvement in the general health and spirits of the patients.—*Pediatrics, August* 1, 1898.

59.—THE OCCURRENCE OF GALL-STONES IN THE PATIENTS OF A GENERAL HOSPITAL, AND ESPECIALLY IN THE SUBJECTS OF MITRAL STENOSIS.

By E. M. Brockbank, M.D., M.R.C.P., late Resident Medical Officer, Royal Infirmary, Manchester.

[From Dr. Brockbank's paper.]

Before introducing the subject matter of this communication, I should like to point out very briefly what to my mind is the

present condition of our knowledge of cholelithiasis. Recent observations seem to suggest that there are two forms of the disease, which are best defined as primary and secondary cholelithiasis. (1) Primary cholelithiasis generally occurs in people who are over 50 years of age and otherwise healthy, and is probably the result of some physiological or nutritional change in the epithelial cells of the mucous membrane of the gall-bladder and bile ducts, which leads to the formation of an abnormal quantity of cholesterin. It is also possible that a deficient supply of bile salts in the bile leads to the imperfect solution of the cholesterin, which is the most important constituent of gall stones, and so predisposes to the development of calculi. Not more than half a dozen cases, which can be looked upon as possibly of this form of the disease, occur in my figures, for it is rarely met with in the post-mortem of a hospital. (2) Secondary cholelithiasis.—This term may be applied to those cases in which gall-stones are met with in patients who have died from some other complaint. It appears at an unusually early age, and under circumstances which suggest that the development of biliary calculi is secondary to pathological changes in other organs, generally the heart or liver. Secondary cholelithiasis is practically the only form of the disease which is met with in the post-mortem room, and consequently nearly all the cases which I shall have to refer to are of this nature. Although fairly commonly found post-mortem, gall-stones in secondary cholelithiasis are rarely suspected during life.

With these rather lengthy preliminary remarks I will introduce the results which I wish to lay before those readers who may be interested in the subject—

(1) Frequency of the occurrence of gall-stones in the autopsies of a general hospital.—During the five and a half years ending with December, 1897, at the Manchester Royal Infirmary, 1,347 complete post-mortem examinations were made, and gall-stones were found in 101 (7·4 per cent.) of the subjects. This number of post-mortems was made up by the two sexes, as follows:—921 males, and gall-stones were found 37 times = 4 per cent.; 426 females, and gall-stones were found 64 times = 15 per cent. So gall-stones were about four times as common in the female as in the male autopsies. It is interesting to compare Schröder's Strassburg statistics with the above figures. This observer found gall-stones in 141 of 1,150 autopsies (12·25 per cent.), and his further analysis shows that calculi were present in 4·4 per cent. of his male and in 20·6 per cent. of his female examinations, the subjects being practically of the same class of subjects as my own, though he had a great many more above 61 years of age. A comparison of the male and female amongst the

Manchester subjects will show how much more prevalent gall-stones are in women than in men at all ages, and especially in advanced life. It will also be seen that the disease is much more common in adult life and old age than in people below 40 years of age—a fact which of course has long been recognised.

(2) Effect of chronic heart disease on the development of cholelithiasis.—In 1896, I expressed the opinion that gall-stones are frequently met with as a secondary affection in severe cardiac lesions, and a further consideration of the question only strengthens my belief in this view. I have gone over, as accurately as I could, the post-mortem notes for the five and a half years mentioned, and have tabulated somewhat roughly the various valvular and muscular affections of the heart, which were severe enough to attract the pathologist's attention. Cases in which the heart was "somewhat flabby" or "slightly fatty" are not included, and nearly all the subjects had suffered from chronic heart disease. In 504 cases, with a decided cardiac lesion, biliary calculi were found 10·9 per cent.; whilst in 843 other non-cardiac cases, only 5·4 per cent. were similarly affected. So a gross cardiac lesion seems to doubt the risk of the development of gall-stones in both male and female subjects. The most striking figures are those in regard to mitral stenosis. Under this heading are included all cases in which the mitral valve was stenosed, irrespective of other morbid cardiac conditions. Of course the value of the figures is greatly discounted, especially amongst the males, by there being so few cases of mitral stenosis to draw conclusions from. But it is a difficult matter to collect a greater number of such cases in which the gall-bladder has been specially examined for evidences of incipient or developed cholelithiasis. However, without wishing to infer that one in three of all male cases of mitral stenosis under 20 years of age is complicated with gall-stones, or that all men between 30 and 40 years of age with mitral stenosis have an immunity from the disease, I think it fair to assume that cholelithiasis is much more prevalent in cases of the heart lesion in question than in other subjects whose hearts are practically normal. But although such a coincident occurrence of the above two conditions is common, it is very unusual to meet with symptoms during life which lead one to suspect the presence of gall-stones in patients suffering from mitral stenosis or from other cardiac lesions. Besides finding biliary concretions in the gall-bladders of subjects of heart disease, I have, on several occasions, examined bile obtained post-mortem from adult subjects who have died of chronic cardiac affections, and in which there was no macroscopic evidence of any tendency to the production of an excess of cholesterin by the mucous membrane. In such cases the bile, when taken from the gall-

bladder, will be found to be full of desquamated epithelial cells, floating singly or in clumps. Mixed with these cells may be found a few cholesterin crystals. If such specimens of bile be kept and be examined from day to day, in many instances it will be seen that the epithelial cells disappear gradually, and that crystals of cholesterin make their appearance in great numbers, until finally no traces of the complete cells remain, and the bile is full of the crystals in innumerable profusion. Such a remarkable change is not always met with in the bile of all chronic heart cases, but still it appears in a large proportion of them, and strengthens my view that there is a strong tendency for the cells of the biliary mucous membrane to excrete, secrete, or, perhaps it is safer to say, to produce an abnormal amount of cholesterin in cases of chronic heart disease. I am unable to give any better explanation of such an occurrence than that which I offered on a previous occasion, namely, that the lowered vitality of the system generally, and the passive congestion of the mucous membrane of the gall-bladder, which accompany severe chronic lesions of the heart, predispose to the formation of an increased amount of cholesterin by the epithelial cells of the biliary passages, and, by the enforced inactivity of the patient, this excess of a crystalline substance tends to remain behind in the dependent fundus of a frequently enlarged depressed and sluggish gall-bladder. — *Edinburgh Medical Journal, July,* 1898.

60.—ACUTE PANCREATITIS.

By E. Septimus Reynolds, M.D., F.R.C.P.

[The following is from Dr. Reynolds' paper. The details of a case and other parts are omitted here.]

As a rule the symptoms come on quite suddenly, with pain (generally severe in character) in the epigastrium, perhaps more often shooting upwards than downwards. The pain sometimes disappears after some hours and reappears on the following day. As a rule the pain is soon followed by vomiting, first of the stomach contents and then of bile, and rarely of fæces (Allina). With the vomiting is associated constipation, and great collapse comes on. There is often a feeling of fulness in the epigastrium, and this region is rather prominent, resistant, tympanitic, and tender on deep pressure. The rest of the abdomen may be retracted. The temperature in the early stage may be raised to 100° or 102° F., but in some cases is low throughout the whole course of the disease. The pulse is often increased in frequency, and in the stage of collapse is not only very frequent but almost imperceptible, and the extremities are blue and cold. The urine

has never, so far as I can find, been found to contain sugar, but occasionally contained albumen, granular and hyaline casts, and a few red blood cells (Paul). It is not infrequent for the initial symptoms of pain and vomiting to disappear after the first day, leaving only the collapse, which may lead to death. In other cases the pain and vomiting reappear before the final collapse and death. Death generally seems to occur within one and a half to five days in severe cases. In some cases, as in mine, there seems to be no doubt that previous attacks had occurred. That the previous similar attacks of pain were due to the pancreatic condition, in my case, seems to be proved by the presence in and round the pancreas of old hemorrhages, and by the large quantity of fairly firm fibrous tissue which surrounded the organ. The extraordinary delirium which was present in my case is peculiar. It is certainly very remarkable that the appearances were so like those of atropine poisoning, and this would, I think, point to some toxin being the cause of such symptoms. In other cases, Fitz states that symptoms resembling those of localised peritonitis may ensue. In addition, suppuration, sloughing, and even detachment of the pancreas may occur.

Diagnosis.—The best guide to the diagnosis of this obscure affection is that tersely given by Fitz. He says:—"Acute pancreatitis is to be suspected when a previously healthy person or a sufferer from occasional attacks of indigestion is suddenly seized with violent pain in the epigastrium, followed by vomiting and collapse, and in the course of twenty-four hours by a circumscribed epigastric swelling, tympanitic or resistant, with slight elevation of temperature." To this I would add the importance of enquiring whether any similar previous attack had occurred, either at a long interval of time or within the previous few days. The conditions to be diagnosed from pancreatitis are as follows:—(1) A considerable number of cases have been diagnosed as acute intestinal obstruction, and laparotomy has been performed, almost always followed by death. It may, indeed, be very difficult to distinguish the two conditions; but the suddenness of the onset, with the great initial pain and the absence of conspicuous general tympanitis or limited distensions of intestinal coils, with the presence of localised epigastric tenderness, together, in some cases, with a history of previous attacks, may enable us to exclude intestinal obstruction. (2) Irritant poisoning may be excluded by the history and by an examination of the vomit, but in some cases of ptomaine poisoning from food there might be great difficulty, and especially in such cases as the one I report, where marked delirium is present. In irritant poisoning, however, diarrhœa is more frequently present than constipation. (3) Perforation

of an ulcer of the stomach or duodenum can in many cases be excluded by the previous history, by the absence of pain after food, hemorrhage from the stomach or intestine, and in the case of perforated gastric ulcer by the presence of vomiting. (4) Biliary colic may be very difficult, if not impossible, to exclude at the commencement of the attack, but if the patient lives the absence of jaundice may be of assistance. A history of similar previous attacks, unattended with jaundice, is, of course, in favour of acute pancreatitis. (5) Aneurism in the neighbourhood of the cœliac axis is not always easy to exclude, especially if there is apparently a pulsating tumour in the epigastrium, perhaps associated with a systolic murmur. (6) Angina pectoris is only to be suspected when the pain shoots across or through the chest, and especially, as in my case, if the pain has ever shot down the left arm. The vomiting, constipation, and raised temperature are, of course, opposed to the diagnosis of angina pectoris. It will be readily understood, as the symptoms of acute pancreatitis are so common to many other affections, that but few cases have been diagnosed before death. Fitz diagnosed one case which was verified by post-mortem examination; Milnes another which recovered; and Osler and Körte each diagnosed one after the abdomen had first been opened.

Prognosis.—There is no doubt that acute pancreatitis is an extremely fatal affection, especially when we remember that if the first attack does not kill, a recurring attack may do so. Cases, however, have been described (in which there was either little or no doubt of the existence of the affection) where recovery took place. Besides the tendency to recur, we must remember the possibility of suppuration or sloughing of the pancreas taking place with the subsequent results.

Treatment.—This is not satisfactory. For the pain and vomiting local hot applications to the epigastrium may be of service, but far better are subcutaneous injections of morphia. For the collapse stimulants and strychnine may be given, and Cayley recommends extract of suprarenal capsule to increase the arterial tension. Milnes seems to think from his case that the administration of enemata caused the vomiting and pain to recur. In my case the eserine given (under the idea that the patient was suffering from atropine poisoning) certainly improved the condition of the pulse and quietened the delirium. If the acute stage passes off, but suppuration or gangrene follows, then surgical interference is necessary. That a gangrenous pancreas can be removed is shown from Trafoyer's case, in which a patient was alive seventeen years after the sloughed pancreas had been discharged by the bowe —*Medical Chronicle, August*, 1898.

61.—SPLENIC ENLARGEMENTS.

The normal organ is generally regarded as situated between the ninth and eleventh ribs, just posterior to the mid-axillary line. If there is universal enlargement of any degree, the dullness would be anterior to this line and the lower limit of the spleen would be below the costal border. It may then be taken as a fairly safe rule that any spleen is enlarged that can be felt below the free margin of the ribs. Given an enlargement in the splenic area, how are we to tell that it is the spleen? It must not be forgotten that an enlarged spleen, greatly enlarged, may reach as far forward as the median line and downward below the level of the umbilicus. The spleen moves with the movements of the diaphragm. If the examining hand be placed transversely across the abdomen, pressing the latter just below the enlargement, and the patient be asked to take a long breath, the edge of the mass, if it be the spleen, can be felt to "ride over" the hand with a decided shock. The examination can be greatly facilitated by having the patient flex his left leg, the physician manipulate from the patient's right, and with his left hand in the lower auxillary region make strong pressure downward toward his right hand, which should be the one placed transversely across the abdomen. Another point of some value is the "flatness," if one may so express it, of the ordinary splenic enlargement. Usually a sharp edge is felt. Lastly, the normal splenic notch is as a rule very much in evidence in the pathologic condition. The organ which first comes to mind, an enlargement of which might be confused with a similar condition as regards the spleen, is the left kidney. A renal enlargement of such a size as to occupy the position of the spleen (in addition to its own and the intervening space), would in almost every case be due to malignant disease (also hydronephrosis). A diagnosis would then rest upon the rapid growth, irregularity of the tumour, cachexia, age (sarcoma of the kidney usually occurs in young children), secondary deposits, examination of the urine and the absence of the special physical signs mentioned under splenic enlargement. We would next have to consider tumours of the pancreas, for new growths are the only lesions that would cause marked enlargement of this organ. Of the new growths carcinoma is the only one deserving of serious consideration; here the central situation, rapid growth, nodular character, and other signs of malignancy, the glycosuria and fatty stools not infrequently present, would be of material aid in the diagnosis. Tumours of the colon would have to be situated at the turn and be of great size to cause a suspicion that we were dealing with a splenic tumour. Such a tumour as it increased in size would be likely to bring about enteroptosis, the amount of intestinal

prolapse being commensurate with the weight of the new mass, unless tight adhesions should have been formed to the contiguous structures, when there would be no displacement whatever. It would likely move with the diaphragmatic movements, unless powerful adhesions were formed. One group of symptoms of importance would be, pronounced intestinal disorder, pain, tenesmus, hemorrhage, diarrhœa alternating with constipation or even with intestinal obstruction. These tumours are also usually of a malignant character. Solid tumours developing from the bony framework, usually chondromata, would not cause much difficulty in diagnosis, nor would tumours of the abdominal walls. Other enlargements, such as floating kidney, hydronephrosis, tumours of the female organs of generation, localised peritoneal accumulations, enlarged retroperitoneal glands, may offer interesting puzzles for diagnosis, but the instances already mentioned are the most common. Having satisfied ourselves that the enlargement is the spleen, we have next to discover the underlying cause. The size and consistency is of considerable value in determining this, especially the former. A spleen but slightly enlarged, one just palpable below the border of the ribs, is a most common condition and occurs with probably greatest frequency in the acute infectious diseases, especially typhoid, pneumonia, acute tuberculosis; in such cases the consistency is soft and the normal splenic shape well retained.

The disease of most interest to us as clinicians, as regards the splenic tumour present in the affection, the so-called "ague cake," is undoubtedly malaria. Why is it that one patient will have spleen barely palpable while another of apparently equal physical condition, and with a coincident infection, will have an enlargement so great as to be dignified by the term "ague cake," still remains one of the malarial mysteries. Certain it is that this "ague cake," once formed, never entirely disappears, though some lessening in size may occur from the cicatricial contraction of the newly formed connective tissue. Thus, years after a malarial infection, we may discover a splenic tumour; the patient may have totally forgotten his malarial attack. The present diagnosis would then be a matter of some difficulty, for as can readily be seen, a history of chills and fever would be of paramount importance. The blood may have been free of any malarial stigmata for years. Of some value in a case of this sort is an enlargement of the liver, though never to a great size; even here, however, that same cicatricial contraction of newly formed connective tissue may have caused the liver to assume the proportions of a cirrhosis; indeed the existence of the hepatic malarial cirrhosis is admitted by most authorities on the subject. Gastric and intestinal disturbances are common in this condition, while a point of great importance if present,

which it rarely is, is the brownish pigmentation of the skin, not more pronounced, as it is in Addison's disease, in any particular locations.

When a spleen enlarges in an ordinary attack of quartan or tertian malaria, the tumour becomes readily manifest in less than a week, and the paroxysms of chill, fever, and sweat, occurring at regular intervals, together with the presence of the plasmodium in the blood, will quickly determine the causal factor in the enlargement. The splenic tumour of leukæmia offers even less difficulty ; it is also often combined with enlargement of the liver. The splenic shape is retained, as is the normal notch. As regards size, in the spleno-myelogenous variety of the disease, it frequently extends as far forward as the middle line of the body, and downward below the level of the umbilicus. The surface is extremely hard and as a rule smooth. It might also be said that its surface possesses a pancake flatness. In the lymphatic form of leukæmia the enlargement never becomes very great. The general symptoms, weakness, malaise, dyspnœa, œdema, pallor, hemorrhages (retina, nose, rectum, kidney) combined with the hæmatologic examination, anæmia, leucocytosis varying from one to five hundred thousand, myelocytes (as high as 30 per cent. in the spleno-myelogenous form), lymphocytosis (as high as 90 per cent. in the lymphatic variety) would readily determine the diagnosis. Hodgkin's disease would not as a rule be difficult to distinguish, from its clinical resemblance to leukæmia, but negative character of the blood. In this disease, too, while the spleen is never excessively enlarged, in fully one-half the cases the enlargement is nodular, due to lymphoid growth, so that the disease might more properly be reckoned under tumours of the spleen. Lymphoid growths in other organs, and especially the common glandular tumours, would also be of great aid here. Amyloid disease affecting the spleen would result in a hard, firm, smooth, greatly enlarged organ, also a similar condition of the liver ; the history would be that of long-continued suppuration, not infrequently an old tuberculosis which has become infected with pus germs, or syphilis. The presence of casts in the urine, answering to the amyloid reaction, would be a strong factor in the diagnosis. In children the spleen becomes more readily palpable from slight pathologic causes than in adults ; thus it becomes enlarged in all the anæmias, in congenital syphilis, and especially in rickets. The shape is retained. Tumours of the spleen are infrequent and with the exception of the lymphoid growths of Hodgkin's disease, need hardly be taken into consideration. The most important are gumma, tuberculosis, carcinoma, sarcoma, hydatids. — *From a leading article in the Journal of the American Medical Association, May* 28 1898.

DISEASES OF THE URINARY ORGANS.

62.—RHUS AROMATICA IN THE INCONTINENCE OF URINE IN CHILDREN.

By Ludwig Freyberger, M.D. Vienna, M.R.C.P. Lond., M.R.C.S. Eng., Clinical Assistant Hospital for Sick Children, &c.

The liquid extract of rhus aromatica resembles in appearance and taste tincture of opium, but its taste is much more astringent. The astringent taste and disagreeable odour of the liquid extract of rhus aromatica are sufficiently disguised by syrupus aromaticus. The dose employed was :—5 to 10 minims for children two to five years old; 10 to 15 minims for children five to ten years old; 15 to 20 minims for older children. A very convenient formula is the following :—℞ ext. rhois aromaticæ liq., min. 10 ; syrup. aromatica, min. 20 ; aq. distillatæ, ad. dr. 1 ; s. three times a day. Rhus aromatica in this form is taken very readily and has never disagreed with any of my patients. It was always given alone without the addition of any tonic whatever, so as not to deduct from the value of the experiment ; but the addition of tonics, as Drs. Powell and Carpenter recommend (*vide supra*), somewhat shortens the time which is necessary for the achievement of a permanent result.

I shall now give a brief summary of the thirty cases of enuresis which have been treated with rhus aromatica. In all cases spoken of as "cured," at least nine months have elapsed since enuresis had occurred for the last time. Of the thirty patients treated with rhus aromatica, twelve are boys and eighteen girls ; their ages vary from three to eleven and a half years. One boy suffered from diurnal, five boys and fifteen girls from nocturnal incontinence ; six boys and three girls presented the combined (or continuous) form of enuresis. The average duration of the treatment was forty days; thirty-five days in boys and forty-five in girls. The first signs of improvement occurred on an average on or about the seventh day of treatment; the earliest on the third, the latest on the twenty-third day. Thirty-three days, on an average, were sufficient to produce a permanent cure, fifty-three days to effect a permanent improvement. Eleven boys and seven girls were permanently cured ; one boy and nine girls were permanently relieved ; in two girls no improvement could be achieved. A relapse occurred in three girls after an interval of some months. A temporary exacerbation of the enuresis was noted in eight cases, three boys and five girls; it occurred during or towards the end of the first week in five cases, and during the second week in three

cases. While this exacerbation lasted the patients not only wetted their beds two or three times every night, but the quantity of urine passed into the bed each time was considerably increased. This interesting, though somewhat unpleasant, phenomenon lasted from four to six days, and in all cases terminated rather abruptly. During this period of flooding the urine was always very pale; its specific gravity varied between 1,002 and 1,007. Considering the great disappointment which parents must necessarily feel at this apparent change for the worse, I have made it a rule to tell the parents beforehand that such a recrudescence might possibly occur, but that it will not last long, and in all probability will soon be followed by a decided improvement.

It would be rash to claim for rhus aromatica the qualities of a specific in the treatment of enuresis in children as long as our knowledge of this drug and its action is based upon the results observed in barely one hundred cases on which reports have been published; but so much may be said in its favour that it appears to be as efficacious as belladonna, that it may be given for however so long without the slightest ill-effect, and that good results may be obtained with it where belladonna proves ineffective.—*From Dr. Freyberger's paper in Treatment, May* 12, 1898.

63.—HÆMATURIA AS A SYMPTOM.

By David Newman, M.D.,
Surgeon to the Royal Infirmary, Glasgow.

[The following is from Dr. Newman's paper.]

Placing aside for the present the hæmaturia due to hydatid disease, the renal hemorrhages of the greatest practical importance from the standpoint of this paper are those arising from injury, renal calculus, tumours of the kidney, and tuberculous disease of that organ. Having determined that the hemorrhage is not from the lower urinary tract it remains to ascertain which of those four causes is to blame. When the hemorrhage is due to renal calculus it is usually small in amount, sometimes constantly present but generally with more or less prolonged intervals and commonly oft-repeated. In some instances, however, the hæmaturia is very slight, while in other cases it may be the only symptom. The bleeding is not closely related to pain or to the development of other symptoms, but as a rule it is increased by movements of the body. This, however, does not always follow immediately, but a short interval may elapse—hours or even days—between the exertion and the appearance of the blood in the urine. While the hæmaturia of

renal calculus is more copious after exercise, rest in bed usually appreciably diminishes it. This peculiarity is most characteristic. The blood, it must be borne in mind, is derived from the renal pelvis and not from the parenchyma; consequently renal blood-casts are not found in the urine and the quantity of albumin is fully explained by the presence of blood. When the urine is evacuated the blood is thoroughly mixed with it, but not so intimately as when the cause of the hæmaturia is structural disease of the kidney, and if the urine be allowed to stand for a few hours the blood corpuscles are readily precipitated and leave the supernatant urine clear. If free from blood the urine will also be found to be non-albuminous. The presence or absence of pus in the urine will be determined by the circumstance whether or not the calculus has induced inflammatory changes, and the existence of a swelling in the renal region will depend upon the amount of freedom for the escape of urine by the ureter. Renal hemorrhage from tumour is generally more profuse and less transient than from calculus, and in not a few cases it is so copious as to cause marked anæmia—a result seldom induced by calculous hæmaturia. It is often developed without any preceding pain. In calculous disease injury or exercise commonly provokes the bleeding and therefore one finds the hemorrhage more profuse during the day while the patient is moving about. The bleeding from tumours is, on the contrary, most likely to occur during the night, while the patient is at rest in the recumbent posture. The urinary deposit may assist one in the diagnosis. Concretions composed of oxalate of lime, uric acid, phosphates, or urates, may indicate the character of the stone, while by carefully filtering the urine in cases of tumour portions of the growth may be procured for microscopic examination. The presence of a persistent swelling in the renal region associated with considerable hæmaturia is of significance and may be held as clearly indicating the presence of a neoplasm in the kidney. Exceptions to this rule have, however, been recorded by Ebstein, Hirtz, and Fleming. But while this is so it must not be forgotten that the presence of a palpable new formation may for a considerable time be preceded by the presence of blood in the urine. Considerable distension of the pelvis may be produced by a calculus obstructing the ureter and so lead to a swelling in the renal region, or the bulging in the loin may be caused by enlargement of the kidney from tuberculous disease; in neither of those conditions, however, does hæmaturia frequently occur. In the latter the very obstruction which causes an increase in bulk of the kidney prevents the hemorrhage.

Although much difficulty is often experienced in distinguishing calculous hæmaturia from that caused by tumours there is

still greater care required in the diagnosis between the hemorrhage of early tuberculous disease and that of renal calculus. The symptoms of the two latter conditions are sometimes identical. This is especially so when the patient fails to show any other evidence of tuberculous disease than that revealed by the renal lesion. In tuberculous disease hæmaturia is frequently absent for long intervals, is seldom so severe as in stone, and is not increased by exercise. In both conditions pus may be mixed with the urine, but while in the latter concretions and gravel may be discovered, in the former careful and repeated search may demonstrate the presence of tuberculous baccilli. In the early stage of tuberculous disease of the kidney, the quantity of albumin in the urine is generally in excess of that accounted for by the blood and in the later stages when pus appears in considerable quantity, the pus and blood are not so rapidly or so completely precipitated from the urine as in calculous pyelitis. The presence of phthisis pulmonalis, tuberculous disease of bones or joints, of the testicle, the prostrate, the vesiculæ seminales, the mesenteric glands, the intestine, or of the lower urinary tract, may give a clue to the cause of the hæmaturia.—*The Lancet, July* 9, 1898.

64.—A CLINICAL LECTURE ON URÆMIA.

By Sir Thomas Grainger Stewart, M.D., F.R.C.P., &c.,
Professor of the Practice of Physic in the
University of Edinburgh;
Physician-in-Ordinary to the Queen for Scotland.

[From Sir Grainger Stewart's paper:]

Acute uræmia is often wonderfully like an epileptic seizure. A patient is taken with general convulsions, and has more or less profound unconsciousness. Very often there is a little lowering of temperature, some contraction of the pupil, and various other changes, but the essentials are the convulsions and the loss of consciousness. Now, you will not be long in practice until you see such a case. It may be in a post-scarlatinal nephritis. You are attending a patient who has passed through scarlet fever, and there come to be, in addition, certain symptoms that indicate that the kidneys have become affected, as they so often do, in connection with that process; and things go well enough for, say, a day or two, but suddenly the child—for it is generally a child which is the subject of them—becomes worse, and you go and find the face more swollen and puffy than ever it has been, and you see that that child has become unconscious. And while you are watching it you see it go into violent convulsions—first a tonic spasm and

then clonic spasms convulsing the whole body, and then, when the convulsion is over, the patient is left in a comatose state. Again the convulsion or, let us say, a series of convulsions seize it, of a most alarming kind, and sometimes you will see the patient actually die of acute uræmia. You may often see uræmia under other conditions. You may see a man who has been going about, rather out of health, perhaps, but with nothing definite enough to make him complain, nothing to take him to a doctor, when suddenly he is seized with what seems to be an attack of epilepsy. And then, after a little time, he is found to remain unconscious. You are called to see him, and during your examination, your finger getting on to the radial, you at once know from the high tension that he has got a renal pulse, and you immediately suspect that this is very likely a case of uræmic convulsions; you make further inquiry and find that so it is. Acute uræmic convulsions, then, may occur either in the course of acute Bright's disease—an inflammatory condition of the kidneys whether following upon scarlet fever or not—or it may occur in these insidious, long-standing forms of Bright's disease which we know as cirrhosis of the kidney.

Now let us turn to chronic forms. You find that a patient who has Bright's disease is taken with a certain set of symptoms which render him somewhat torpid. He begins to be indifferent in his manner and slow in his replies, and somewhat dragging in speech, and as you watch him day by day you find him getting gradually more torpid and more indifferent. Then you see that his tongue has become greatly furred. Along with that there is loss of appetite, and the man has occasionally severe fits of vomiting. He brings up mucus and partially digested food and other matter in considerable quantity. And then you further find on inquiry that he complains, if he can be got to complain at all, that he has some sort of uneasiness about his throat, and when you look into his throat you see that it is red and congested, and that perhaps there is a good deal of mucus clinging about the pillars of the fauces, covering the tonsils and the back of the pharynx. Each day as you visit him you find he has got more torpid and more indifferent, and at last you notice that he has got so indifferent and torpid that you can scarcely rouse him at all. And later he becomes unconscious altogether, and you find twitchings of muscles. Perhaps he gets actual convulsions, but by slow process, lasting for ten days or longer, he passes into this final state and, as a rule, dies. This variety of uræmia is associated with the more chronic varieties of Bright's disease, the pure cirrhosis or the long-standing inflammatory with much interstitial over-growth. Now remember that many a case you will see recover from acute uræmia, but very few indeed will you see recover

from chronic uræmia. Chronic cases usually go on to a fatal result. Besides these two great types, you have to understand that there is quite a number of other types of uræmia which you ought to be acquainted with. For example, on the sensory side there is such a thing as uræmic blindness. As to the motor conditions, besides the convulsing tendency, I would like you to remember that now and then in uræmia you see a patient become paralytic or paretic; that, in fact, not infrequently you see such patients get slightly paralysed—perhaps a dropping of the eyelids, perhaps a slight squint, or some other token which enables you to see that he has become paretic or actually paralysed in some part.

As regards uræmic dyspnœa, you will sometimes see a patient who has most extraordinarily laboured and deep breathing, yet when you examine the lungs you find practically nothing wrong; auscultation reveals nothing but over-action of the lungs. That patient has his respiratory centre poisoned, and the excited action of the respiratory process is due to that poison. And very often such a case proceeds speedily to a fatal termination. Besides this, you will very often find there are head conditions of much importance. Vomiting is a very marked feature occurring in uræmia. It is partly of cerebral and partly of gastric origin. Sometimes the patient becomes the subject of delusions—he is practically insane for the time—in consequence of the kidney poisoning. Sometimes, in consequence of these delusions, you find the patient very noisy and excited. You will sometimes find that their delirium is wild and excited, and, on the other hand, you may find it low and muttering.

Now, as I have already said, these attacks occur in cases of kidney disease of the most varied kind. You will see them in the advanced stages of inflammatory conditions of the kidney, cases that have begun with dropsy, with diminution of urine, and so on, and you will see them in the cirrhotic form—that is to say, cases which have never shown any dropsy, but have insidiously advanced, and which are often difficult of diagnosis, but are made out by their secondary results on the heart and other organs, as well as by the state of the urine.—*Practitioner*, *July*, 1898.

65.—TAPPING AND VENESECTION IN NEPHRITIS AND URÆMIA.

By Professor C. A. Ewald.

Puncture for ascites and pleurisy is done too seldom—that is, the physician waits until a considerable amount of fluid has collected. Several weeks are allowed to elapse between the

punctures, and in the meantime the organism is exposed to all the dangers, local and general, that a collection of fluid in a serous cavity brings with it. The spontaneous resorption of such fluid is extremely difficult. These are sufficient grounds to justify the making of punctures in such cases as often as the slightest indication presents itself. To this it is objected that experience shows that transudates removed by puncture are renewed very rapidly, and some have even believed that their removal of itself constituted an irritation sufficient to lead to their rapid renewal. It was thought, too, that the removal of a transudate deprived the organism of an important amount of albumin. Neither of these objections holds. The albumin in such cases is in a form in which it cannot be of use for organic metabolism, and it is in such small quantities that its loss, as I showed years ago, cannot be of the slightest importance. As to the renewal of the fluid, that is due to the course of the disease, not to the puncture for its removal. When the affection grows better the repeated punctures cease, and they have had an important influence for good. In such cases I puncture and withdraw the fluid that has collected as often as enough fluid has collected to make puncture possible, that is, under circumstances every third or fourth day, and with excellent results. The drainage of the œdema I effect by means of long needles, such as are used for tapping the pleura. They are inserted into the subcutaneous tissue, as far as possible parallel to the skin, and the part that projects is covered with a layer of salicylic cotton and iodoform collodion. To the end of the cannula a rubber tube is attached that hangs down alongside the bed, in a vessel placed to receive the fluid that trickles through the tube. By means of a safety pin, the rubber tube is fixed on the mattress, and not allowed to pull upon the needle persistently. Into each leg one or more needles are inserted, and it is thus possible to withdraw three to five litres of a clear amber-coloured fluid in a day. As the subcutaneous areolor tissue is everywhere freely in communication with other parts, the fluid is withdrawn, not alone from the legs, but from the abdominal walls and the scrotum as well. Of course these manipulations must be carried out under the strictest antiseptic precautions. Erysipelas, gangrene, or any other serious accident, I have never seen except in one case. Erythematous conditions sometimes set in, but disappear promptly under an alcohol bandage. This procedure has these advantages over scarification—it is much more cleanly, and does not cause the skin to be soaked with œdema fluid for long periods, and much larger quantities of fluid are removed with less inconvenience.

The symptoms of uræmic intoxication present, as is well known, a most varied picture. They may occur in acute or

chronic form, from slight headache or nausea (gastric catarrh) to uncontrollable vomiting and diarrhœa, from nervous unrest and a feeling of anxiety to the severest epileptiform attacks, from the lowest grade of benumbed sensation up to deepest coma. They may present themselves in varying forms. They may appear under the form of chronic insanity, or of periodic attacks of confusional insanity, or as light attacks of delirium, or may simulate asthma, angina pectoris, or cardiac asthma; they may be complicated by hemiplegia or monoplegia, anæsthesia, slight pareses, attacks of vertigo, nose bleeding, or disturbances of sight or hearing, &c. There is manifestly always question of an autointoxication—that is, of a toxic effect of products in the circulation which should have been excreted by the kidneys. Nothing would seem more feasible and more likely to be of benefit than to withdraw a portion of the blood, and so decrease the absolute amount of toxin and make the blood more watery—especially if you infuse, as von Leube does, after the venesection a certain quantity of physiological salt water. Medical men have, in my opinion, in recent times neglected venesection too much in such cases.

Bartels got excellent results from venesection in cutting short acute attacks of uræmia. Krönig and Senator have recommended it after personal experience in recent years. I am far from saying that venesection should be done in every case. But where the strength of the patient will permit it, and where the conditions of the heart do not prevent an evident uræmia, as soon as the other well-known remedies have no quick effect, he should be treated without delay by plenteous bloodletting, that is, by the abstraction of 200 to 400 g. of blood. In future I shall combine with the bleeding an infusion of saline water, as von Leube recommended it. The passing or permanent success of venesection has, in my cases, been equal to 62½ per cent. of the occasions on which it has been employed. That furnishes ground enough, to my mind, to justify me in recommending the employment of venesection in uræmia.—*From Dr. Ewald's paper read before the Edinburgh meeting of the British Medical Association, British Medical Journal, October* 8, 1898.

66.—THE SYMPTOMS OF NEPHRITIS.

A few years ago, when the microscope first began to clear up the mists which pervaded medicine, and when the excretions of the body received attention due them, many observers were not slow in finding in the sediment of the urine bodies which

were denominated casts. Some observers went further than this, and a few years ago it was thought possible to differentiate the different varieties of nephritis by the kind of cast found in the urine, attributing the hyaline cast to the interstitial variety and the granular to the parenchymatous. But even before this time the urine had received attention, and albumin had been demonstrated by chemic methods. Clinical experience had told them of the pallor of the skin, of the hardened arteries, and of the œdema which was sometimes present. Combining these facts obtained by clinical experience with the occurrence of albumin and casts in the urine, it was thought that to make a diagnosis of nephritis was comparatively easy. But anæmia, high arterial tension, and œdema may be present in other conditions than nephritis, so they only form concomitant symptoms, and the diagnosis hinges upon the amount of urine excreted and the presence of albumin and casts in the urine. When albumin and casts were found in the urine it was thought that this indicated a pathologic condition of the kidneys, but this teaching is gradually being restricted, while some writers have not only given up the idea of making a differentiation of the varieties of nephritis by the kind of casts found, but claim that both albumin and casts are found, even though nephritis be not present. The combination method of Professor Haines, for example, will detect casts in urine normal to coarser tests. Clearly some one is wrong, and it is due the profession to adopt some symptom-complex which will settle the question once for all.

It may be that in order to detect albumin some writers have used tests which are extremely delicate, so much so that the faintest trace may be found, while others rely upon the heat and nitric acid test, which is reliable enough for all practical purposes, and why should it be discarded for others which may throw a cloud about the final diagnosis? If casts are found in the urine in health why should we make a diagnosis of diseased kidney when they are present? Now, if different varieties of casts are found in all cases of nephritis, how can we say that the one is interstitial and the other parenchymatous? It looks as though the clinical symptoms as observed by the naked eye are taking precedence over the results obtained by microscopic evidence, and clearly there is a fault somewhere. Why not let us say that if albumin is present by some standard test, it indicates nephritis, or if a certain prevailing variety of cast or some other body is found, it indicates the variety of nephritis? Evidence should not be very hard to obtain, and is the duty of those who can do so to set this matter at rest.—*A leading article in the Journal of the American Medical Association, July* 23, 1898.

67.—CLINICAL STUDY OF INTERSTITIAL NEPHRITIS.

By Everett J. Brown, M.D., of Decatur, Ill.

[The following is taken from Dr. Brown's paper. The author is rather unusually strict in the question of diet.]

Many cases of interstitial nephritis are called and treated as neurasthenia. Dercum has recently called attention to this. He says:—"A supposed neurasthenia may possibly be an obscure case of interstitial nephritis, in which it is necessary to make repeated search in the urine to find the proof." Professor Dujardin-Beaumetz says:—"How many cases of death unexplained have resulted from interstitial nephritis? How many diseases have deceived the physician as to their true nature and have been dependent exclusively on renal cirrhosis? The number is greater than you would suppose, and such mistakes, constantly committed, result from the fact that physicians have always been in the habit of referring for the diagnosis of chronic nephritis to Bright's description, and have an idea that it is necessary in order to be warranted in diagnosing this affection to have general œdema and scanty urine, which must be very albuminous. When these symptoms are not found they seek elsewhere for the cause of the disease and ascribe it by turns to other organs." Contracted kidneys are more often found in men than in women, and the age is usually over 40 years, although many cases are recorded as occurring in children. Of the sixteen cases constituting this report, eleven were in males and five in females; the youngest patient was 24 years and the oldest 71 years. Five cases occurred in the third decade, none in the fourth, five in the fifth decade, four in the sixth, and one in the seventh. The increased amount of urine passed is usually the first symptom noticed by the patient. In six of the cases above mentioned in which frequent daily measurements of urine were made, the average daily amount of thirty-six observations was 66 ounces; the maximum passed in one day of twenty-four hours was 128 ounces and the minimum was 48 ounces. In one case, that of a woman, aged 56 years, in which nineteen measurements were made, the average daily excretion was 64 ounces; the minimum being 42 and the maximum 88.

No disease is more insidious in its approach than is interstitial nephritis, and, as I have said before, it may have existed for years, and give its first intimation in the shape of a profound uræmia. Some obscure symptom may lead us to an examination of the urine, such as arising at night to urinate, or a tense, bounding pulse, or a too strong impulse of the heart against the chest wall; or there may be a slight puffiness of the ankles,

noticed only at night and evidenced only by the shoe being a little too tight. Often the patient has a feeling of unaccountable weakness or of being so often tired. The heart soon shows signs of a hypertrophy of the left ventricle; the impulse of the heart is more bounding, the apex beat is displaced lower and to the left, the percussion area is increased, but, above all, there is a sharp accentuation of the second aortic sound, plainly evident when the stethoscope is placed over the second costal cartilage to the right of the sternum. An important point in diagnosis is to distinguish the high pulse tension of Bright's disease from the hardening of arterio-sclerosis; in the former the artery is obliterated below the point of finger pressure, while in sclerosis it can still be felt in outline. With the sphygmograph a characteristic pulse tracing is given, and this means of diagnosis should be used whenever possible, for it gives evidence of high pressure which cannot be detected by the finger. Other circulatory symptoms are dyspnœa, palpitation, reduplication of the systolic sound, and an uncomfortable pulsation in the head and other parts of the body; but with all these symptoms there is no heart murmur because there is no valvular disease, unless it be as a complication; in fact, cardiac hypertrophy without murmur usually means Bright's disease. The hypertrophy is a conservative process and may carry the patient along quite comfortably for many years; but when it finally fails we have dilatation and diminished blood pressure, and with it a diminished secretion of urine, high specific gravity, abundance of albumin and casts, cardiac dyspnœa, palpitation, dizziness, dropsy, and death from uræmia. Dimness of vision due to albuminuric retinitis is a common symptom. It is often first recognised by the ophthalmologist, and generally means an advanced stage of the disease. Some assign two years as the limit of life after its recognition. Many cases of apoplexy show an interstitial nephritis at the autopsy. Dickinson says that half the fatal cases of apoplexy are preceded by this disease.

Prognosis and treatment.—We cannot cure interstitial nephritis, but if the patient will co-operate with us by proper dieting, mode of life, &c., we can promise him that his life may be prolonged many years and often indefinitely; let him remember that he must not eat anything that comes from a butcher's shop; let his meat be confined to fish and an occasional meal of poultry, but no eggs or other nitrogenous food; restrict the quantity of sugars and starches and encourage the ingestion of fats; he should drink an abundance of milk, and avoid wines, spirits, and tobacco; exercise in the open air is very desirable, and an occasional change of scene and climate is beneficial; woollen undergarments should be worn throughout.

the year, the weight varying with the season; the night robe should be woollen and reach to the feet; plenty of water should be taken between meals and a moderate quantity at the meal; in all cases the bowels should be carefully regulated. Many cases need no medicine whatever, but those patients who are apparently well, but with some hypertrophy of the left ventricle with a tense pulse, and who feel dizzy at times and have headache, are much relieved by potassium iodide, which softens the pulse and relieves the contracted arterioles. In treating this disease we must remember that there are two indications to be fulfilled; first, to remove an irritant poison from the system; and second, to relax the contracted blood-vessels. For the first object we give diuretics, such as acetate of potassium and digitalis; also diaphoretics, such as the hot bath or hot pack and pilocarpine, and then free catharsis. For the second purpose, that of relaxing the contracted arteries, iodide of potassium, chloral, and nitro-glycerine. Nitro-glycerine is by far the best remedy for removing the symptoms due to high tension, such as dizziness, throbbing in the head, dyspnœa, &c. For the direct effect upon the pathological condition in the kidneys, most authorities believe in the long-continued use of small doses of iodide of potassium and bichloride of mercury.—*Medical Record, September* 3, 1898.

68.—THE DIFFERENTIATION OF THE CARDIAC INCOMPETENCY OF CHRONIC NEPHRITIS AND OF INTRINSIC HEART DISEASE.

By Frank Billings, M.D., Chicago, Ill.

The difficulty of the recognition of the primary cause of the incompetent heart is the intimate relation which exists between the cardio-vascular system and the kidneys. In all inflammatory diseases of the kidneys there are cardio-vascular changes, which are most marked in the so-called granular kidney. These fibroid changes of the arteries and hypertrophy of the heart, when most marked are easily recognised by the physical signs and the characteristic urinary findings. In these cases, too, there is not, as a rule, a tendency to that form of heart incompetency which leads to dropsy. The arteries, palpable and invisible, partake of the fibroid change, and cerebral or other hemorrhage is more likely to occur than dropsy. Headaches, nausea, vomiting, cyclical diarrhœa, retinal changes, mental excitement or hebetude of mind, coma or epileptoid convulsions are the rule in the later stages of the disease. In chronic tubal

nephritis, on the other hand, while cardio-vascular changes are less marked, dropsy may occur with all the phenomena of an incompetent heart. The pallor of the patient, the puffy, waxy face, the retinal changes, the headache, nausea and vomiting, the cyclical diarrhœa, the epigastric pain and pressure or sense of weight, the scant urine containing much albumin, with hyaline, granular, epithelial and fatty casts, with microscopic quantities of blood at times; and frequently all the signs of a dilated heart, with endocardial murmurs and a weak, rapid and sometimes intermittent or irregular pulse are not unusual phenomena. The incompetent heart of an arterio-sclerosis which involves the coronary arteries alone or of the arteries of the heart and kidneys or of the general arterial system, may present phenomena so nearly like the clinical findings of one or both of the inflammatory condition of the kidneys mentioned that the differentiation becomes difficult. There may be the thickened artery, the sustained full pulse, the hypertrophied or dilated heart, the retinal changes, vomiting, diarrhœa, nervous phenomena, headache, albuminous urine with deficient urea, and the presence of casts of all varieties. An incompetent heart from valvular disease, presenting, first of all, the physical findings, characteristic murmurs, dyspnœa of exertion, cyanosis, dropsy, beginning in the lower extremities, enlarged liver, portal congestion with consequent indigestion, tendency to thrombosis or embolism, a concentrated albuminous and often bloody urine, with hyaline and granular casts, is easily recognised when classical, but may present symptoms and clinical findings which make differentiation from primary kidney disease very difficult. In other words, kidney disease, with cardio-vascular changes and an intrinsic heart disease, with broken compensation and resulting venous congestion of the kidney, often present common symptoms and signs, which may indicate coincident primary involvement, or a primary disease of the one with resulting disease or disturbance of function of the other. Those phenomena common to both I have already enumerated. There are special phenomena, however, sometimes present, which although sometimes common to the two are more often the result of a primary heart or kidney lesion alone, and these signs or conditions are of some aid in differentiating diagnosis.

If the urine, even though scant, shows a relatively low specific gravity, with diminished total solids, lessened urea, much albumin, and casts of all varieties. If the arterial fibrosis is marked and the pulse full and sustained, or without arterial thickening if the pulse is sustained. If the dropsical effusion is poor in albumin. If the dropsical effusion contain urea in considerable amount. If there is a tendency to inflammation of

serous surfaces, pericarditis and pleuritis especially. If there is a tendency to persistent morning nausea and vomiting of stringy mucus. If there is tendency to periodic diarrhœa. If there is much headache, especially severe frontal and occipital pain. If there is a tendency at one time to unrest and mental excitement, or at another to somnolence or to coma. If cerebral hemorrhage occur. If the dyspnœa of exertion becomes of the Cheyne-Stokes type. If severe epigastric pain occur. If the eye ground shows the changes common in albuminuria, and if the patient present a pale, waxy, puffy face and heavy expression and a general anæmia—the diagnosis is in favour of nephritis. If there is a history of antecedent disease in which endocarditis may have occurred. If the heart shows physical signs of valvular disease with characteristic murmurs. If there is an irregular heart action persistent in character. If the pulse is weak and not sustained, with or without arterial fibrosis. If the dyspnœa of exertion is attended with cyanosis. If there is a normal amount of red cells and hæmoglobin or only a moderate degree of anæmia. If the dropsical effusion begins in the lower extremities, appearing during the day. If the dropsical effusion is relatively rich in albumin. If the dropsical effusion contains relatively little or no urea. If there is a much enlargement of the liver and tenderness of the left lobe. If the the urine is scant, of high specific gravity, with much lateritious deposit, little or no albumin, a high percentage of urea, although the total urea of twenty-four hours is deficient; a few casts only, chiefly hyaline or finely granular. If there is little or no headache, no eyeground changes, and if venous thrombosis or embolism occur—the diagnosis is in favour of intrinsic heart disease.—*Journal of the American Medical Association, July* 16, 1898.

Surgery.

GENERAL SURGERY AND THERAPEUTICS.

69.—FURTHER REPORT UPON ASEPTIC AND SEPTIC SURGICAL CASES.

By C. B. Lockwood, F.R.C.S. Eng.,
Assistant Surgeon in St. Bartholomew's Hospital, &c.

[The following short excerpt is taken from Mr. Lockwood's paper:]

Disinfection of the hands.—We now adhere scrupulously to our method, which is not less than three minutes' scrubbing with hot water and soap, and two minutes' immersion in a solution of biniodide of mercury in methylated spirit. Further, whilst doing this we look at the clock. Once the hands of a new and inexperienced assistant were tested, and found to be septic.

Disinfection of the patient's skin.—The solution of mercury biniodide in methylated spirit (1 in 500) now gives almost as good results in the disinfection of the skin of the patient. The best were obtained by Mr. Williamson, who disinfected the skin of the groin, scrotum, and abdomen twenty-one consecutive times. It is clear that as much depends upon the manner in which the methods are used as upon the methods themselves. We have now realised the extreme importance of extracting all the fat and sebaceous material before applying the disinfectant. This is done with ether or turpentine, after shaving and thorough soaping and scrubbing. Different regions present, as might be expected, different degrees of resistance. The scrotum is particularly hard to disinfect, and also the skin of the groin; these gave our only septic results. Out of forty-five tests of the patient's skin four were septic. The skin of the scrotum was tested thrice, and was aseptic twice and septic once. The skin of the groin was tested twenty-eight times, and was aseptic twenty-five times and septic three. The skin of the abdomen was tested nine times before operations on the gall bladder (3), urinary bladder (1), ovaries (2), vermiform appendix (3), and for removal of fibroma. These were all aseptic, as were also the results of two tests of the skin of the back; once before an operation on the kidney, and once before the opening of an

abscess. It is satisfactory to know that the methods we use give such good results when applied to the abdomen. Sepsis is so much more dangerous there than in the case of the scrotum. The skin of the limbs is also particularly easy to disinfect. The skin of the leg was tested twice—once before the removal of a cartilage from the knee and once before an operation for varix. As in all our other tests of the skin of the limbs, these were aseptic. The skin of the breast and the skin of the neck were tested, each on one occasion, and found to be sterile. These results are a decided improvement upon those given in last report. Sepsis depends upon a great many causes besides those dealt with in this report; and it is clear that much remains to be explained. For instance, the skin of the scrotum is exceedingly difficult to disinfect, and with the exception of the scalp, has a higher proportion of sepsis than any other. Nevertheless, the scrotal wounds have done exceedingly well. For instance, we have only had one suppuration in forty-three wounds made for the cure of chronic hydrocele of the tunica vaginalis. In the case which suppurated, the patient was very careless, and passed urine into his dressing.

In the groin the commonest operation is that for the radical cure of non-strangulated inguinal hernia. When these are arranged in consecutive series of fifty, they show that the improvement in methods has been accompanied by an improvement in results. If suppuration depended entirely upon infection from the skin, instruments, or materials, we should expect a low percentage in abdominal operations. I have, however, been disappointed in this respect. Abdominal operations vary so much that it would be hardly reasonable to lump them all together, as was done with radical cure of hernia, of hydrocele, and of varicocele. For instance, an appendix operation in which pus is met with, or a kidney extirpation with turbid urine, is not analogous to a median laparotomy for the removal of an ovarian tumour, hydrosalpinx, or ruptured Fallopian tube.—*The British Medical Journal, September* 17, 1898.

70.—IODOFORM IN LOCAL TUBERCULOSIS.

The surgery of tuberculosis is not confined to the use of the scalpel, curette, and bone-chisel, since one of the most decided advances along this line is the positive demonstration that iodoform is curative when brought in contact with tuberculous tissue. This fact has led to its extensive use as an injection into all tuberculous areas, and its value is far greater than the average practitioner realises. Tuberculous joints need not

always be excised, caries of the spine is most beneficially influenced by iodoform, and cold abscess in any part of the body should be treated by this method before open operation is suggested. Billroth and Mikulicz were among the first to propose the injection of such cavities with a 10 per cent. solution of iodoform, and the following represents the accepted method of procedure at the present day. The tuberculous abscess or joint cavity is first tapped under strict aseptic precautions with a large trocar and the semi-fluid contents and tissue fragments withdrawn. The cavity is then thoroughly irrigated with sterile-water, and a 10 per cent. mixture of iodoform in glycerine injected through the trocar to a full distension of the cavity. The filled cavity or joint is then manipulated to bring the iodoform solution in contact with every interstice of its interior. A gradual absorption of the glycerine leaves powdered iodoform in direct contact with every part of the tuberculous lining membrane. The cavity usually refills and the process must be repeated two or three times at intervals of a few weeks before a cure is effected. The iodoform appears to cause a breaking down of tuberculous membrane lining such a cavity, the underlying tissues are stimulated to throw out granulations which help to soften and throw off the membrane, and the cavity eventually cicatrizes. Normal cartilage in a joint is unchanged by the iodoform, and the amount of motion regained in such a joint will depend upon the extent of the destruction already existing in the articular cartilage. The best point for puncture in the wrist is just below the styloid process of the ulna, and in the elbow-joint just above the head of the radius. In the hip a point is chosen just above the greater trochanter (the thigh adducted and rotated inward) and the needle thrust directly inward until it strikes the head of the femur. The knee is best tapped on either side beneath the patella, and the ankle beneath the malleoli. Anæsthesia is unnecessary in any one of these processes. A joint retains its swelling, as a rule, after the first injection and a slight reaction is present, but with subsequent drainage and injection of the joint at intervals of three or four weeks, the tissues become firmer and the swelling disappears. As a primary measure in all cases of joint tuberculosis this method possesses great value, and in such cases as spinal caries (Pott's disease), where the diseased bone is inaccessible to operation, it is invaluable. Of course in those cases of bone tuberculosis where an open operation may remove entirely the diseased area and leave the parts in a condition suitable for permanent cure, operation is to be preferred. Tuberculous sinuses are much benefited and often healed by the use of a 10 per cent. solution of iodoform in olive oil. The orthopædic surgeon is certainly teaching us two very important

facts with regard to local tuberculosis ; first, that the condition is amenable to treatment to the degree of perfect cure ; and second, that the attainment of this result requires unlimited patience and perseverance.—*From a leading article in the Medical News, September* 17, 1898.

71.—THE POST-OPERATIVE USE OF INTRAVENOUS SALINE INJECTIONS.

By Eugene Boise, M.D., Mich.

[From Dr. Boise's paper.]

The five post-operative conditions which seriously endanger the life of the patient are :—(1) Hemorrhage, (2) shock, (3) sepsis, (4) uræmia, (5) intestinal obstruction. In all of these conditions the intravenous use of saline solutions is indicated as a primary and extremely valuable factor in our life-saving efforts. I believe the intravenous route should have preference over all others, because, first, by the use of a proper technic there is practically no more danger than by any other route; second, it supplies fluid to the system most quickly and most certainly ; third, it brings heat directly to the cardiac and arterial ganglia ; and fourth, by this method the stimulating effect of the saline solution on the heart-muscle is more immediate and more pronounced. In exceptional cases subcutaneous injections may preferably be used. It may also be well in certain cases to supplement intravenous injections with high rectal injections. But, accepting the assertion that the intravenous method is practically no more dangerous than the others, its use should be the rule, the judgment of the operator telling him when it should be aided or supplanted by one or both of the other methods. Again, I believe the solution should always be used as hot as can be safely borne—or at a temperature of 115° or 118° F. In shock, in uræmia, in dynamic ileus (especially if supplemented by high rectal injections), the addition of hot saline solution to the blood is beneficial. In hemorrhage, so severe as to prove fatal, though about one-half of the normal quantity of blood always remains in the body, death is caused by acute anæmia of the nerve-centres. If the blood-vessels can be quickly refilled by a fluid which is not injurious to the normal blood, life will be preserved, and all the organs will continue their physiologic activity. Of these solutions the normal saline solution has proven the most acceptable.

Many patients present themselves for operation in a condition somewhat resembling that brought about by an acute hemorrhage. To such patients the free administration of water

during the few days immediately preceding operation, and the use of a large intravenous injection of hot saline solution after the patient is anæsthetised, will be of great benefit, not only in lessening the anxiety of the anæsthetiser, but in allaying the discomforts necessarily consequent to the operation and in aiding the speedy re-establishment of normal physiologic functions. In post-operative shock, a condition in no sense connected with or dependent on hemorrhage, this use of hot saline solution has proved one of the most valuable therapeutic measures we possess. In such cases the experience of operators everywhere has proved that the injection directly into a vein of a hot saline solution (118° or 120° F.) is extremely valuable. In sepsis, also, recent investigations and experiments have demonstrated the great value of intravenous injections.

Lejars says these injections are of the utmost value, and the great trouble is that they are not used in sufficiently large amounts.

Tommasoli of Palermo reports a case of burns, so severe as to be generally considered fatal, in which saline solution was used subcutaneously several times, resulting finally in recovery in an otherwise hopeless case. In addition, they certainly aid very powerfully in eliminating the poison, both through the kidneys and perspiratory glands. In those cases of partial or complete suppression of urine following operation, which so frequently result fatally in spite of our best efforts, the intravenous administration of saline solution will be of great assistance, whether the suppression is consequent on previously existing disease of the kidneys, or on conditions incident to the operation itself. Indeed, I think I am justified in saying that it is the best therapeutic agent at our command. It will, moreover, broaden our field of work in that it will enable us to operate in cases which we have heretofore avoided because of degenerative changes in the kidneys. Again, in cases of ileus, so severe as to endanger life, intravenous injections will afford valuable aid. Cases are seen occasionally so severe or so advanced as to threaten certain death if not relieved by surgical means, and yet the condition of the patient is such that operation seems absolutely contraindicated.

Injections may be used both before and after operation with great benefit. Before, in all cases where the vitality of the patient is low, as in acute or chronic anæmia, traumatic shock, especially if complicated by hemorrhage, the state of shock or collapse due to severe and overwhelming poisoning of the nerve centres, as from rupture of an abscess into the peritoneal cavity, and in cases of albuminuria due to organic disease of the kidneys. They may be used with great benefit after operation in all those conditions which directly endanger life—hemorrhage,

shock, uræmia, and blood poisoning of all kinds. As to the technic, I shall say but little. The apparatus should be as simple as possible, and yet so arranged that the temperature of the fluid can be ascertained and regulated as it passes into the vein. An apparatus, for instance, composed of two reservoirs, one for very hot and the other for cold water, emptying into a common reservoir, like an ordinary irrigating apparatus, the outflow from each to be regulated according to the heat at the lower extremity of the tube, as demonstrated by a sensitive thermometer so attached to the tube that the bulb is bathed in the solution. The part introduced into the vein should be of glass, narrow at the point like an ordinary medicine-dropper. A free incision should be made in order that there may be plenty of room. The vein should be well exposed and incised longitudinally. All air should be expelled from the tube by allowing the fluid to run through it, and the glass tube should be inserted into the vein while the fluid is escaping, care being taken that it penetrates the vein and not merely its sheath.—*Medical News, September* 10, 1898.

72.—THE AMBULATORY TREATMENT OF FRACTURES.

During the past few years much has been written concerning the ambulatory treatment of fractures of the long bones. A great deal of interest has been manifested, both here and abroad, and a great deal of confusion, more than is warranted, seems to exist in the minds of some who have spoken and written upon the subject, as to exactly what ambulatory treatment is. Many of those who have discussed the question appear to be under the impression that the ambulatory treatment of fractures consisted in the application of a plaster-of-Paris splint, say to a fractured tibia, in the usual way, and the allowing of the patient to get about on crutches as well as he might be able to do. This method of treatment can certainly not be designated ambulatory, in the sense in which the term should be used. The patient is undoubtedly getting about, but it is largely his determination or his necessity and his success in learning to use crutches that enable him to do so. In these instances the discomfort of the patient is apt to be much increased by the swelling of his foot, which results in part from its dependent position and in part also from the fact that the muscles are not acting, and consequently are not assisting venous return. Those writers and speakers who have the clearest conception of what ambulatory treatment really is have

given us quite another picture. Still taking a fracture of the tibia with or without a fracture of the fibula as an example, we have described to us a radically different but superficially similar procedure. This true ambulatory treatment consists in applying the plaster-of-Paris to the limb so that it is suspended in a rigid case from the knee down, and is enveloped in soft material with a thick pad under the foot. The weight of the body in attempts at walking is carried by the splint, which must have a thickly padded collar of plaster-of-Paris at its upper end, just below the tuberosities of the tibia, upon which the weight of the body rests. The whole splint must be strong enough not to "buckle" under pressure, and still must not be so heavy as to prevent the patient getting about with ease. If we apply such an apparatus soon after the occurrence of the fracture, and allow the patient to attempt to walk, perhaps with the aid of one or two canes at first, we are really employing ambulatory treatment. The success of the method will of course depend to some extent upon the nature of the fracture, and we shall also find that patients will vary very much in their inclination to avail themselves of the possibilities of this method. Fractures close to the knee-joints, especially if there is any comminution, would be better treated by some other method. Fractures of the femur may in some cases be treated by the ambulatory method, but the apparatus must necessarily be much more cumbersome, and the difficulty in maintaining sufficient extension may be considerable.

There is another side to the question in introducing a therapeutic measure which seems so different from accepted methods. Many surgeons would hesitate, and very justly, to attempt this form of treatment, because of its effect on the mind of the patient. The idea that a broken bone must be "set" and held firmly in position is so well fixed in the minds of the laity that, if we should neglect to go through some process which we must describe as "setting" with subsequent fixation, we may leave a germ in the patient's mind, the mature fruit of which will be a charge of incompetence and neglect, and a suit for malpractice in case the result should not be perfect, something which can practically not be absolutely guaranteed. Wrapped up in this idea of "setting" is the idea that fracture of the leg must be treated by rest in bed, so that the bones may "knit." It is for such reasons that our treatment of fractures, especially of the long bones, has been of the most conservative nature, and our hesitation has been so great to depart from the old lines. However, in selected cases, this ambulatory method has given results good enough to encourage us to go on with it, and to attempt to define the limits within which it should be applied.—*A leading article in the Medical Record, August* 13, 1898.

73.—THE TREATMENT OF FRACTURED BONES BY OPERATION.

By Arthur E. Barker, F.R.C.S., Eng. & Irel., Surgeon to University College Hospital, &c.

As yet the majority of surgeons appear to be agreed that for most ordinary fractures other and simpler mechanical modes of treatment are quite adequate and involve less risk, and with this view I entirely agree. There are, however, a considerable number of fractures which proverbially give but indifferent results if treated by mechanical appliances, and to these surgeons are beginning to apply operative treatment in ever increasing numbers. To this class belong fractures of the patella and of the olecranon, whether recent or old, and fractures of the long bones of the leg or arm in which union is long delayed or totally absent. Hitherto the great bugbear in the operative treatment of such fractures has been the risk to limb or life involved in the operation. But how far this ought to be the case now with our greatly improved technique is a matter which appears to me to be open to discussion. With a view to clear my own impressions upon this subject I have for some time past been collecting those cases in which I have operated for fractured bones and studying the results in order to see whether the series appears to justify such interference or not. The 46 cases arrange themselves thus :—Subcutaneous suture of patella for fracture, 19 ; suture of patella (open method), 10 ; suture of olecranon for fracture, 6 ; suture of olecranon for dislocation, 2 ; suture of bones of forearm (ununited fracture), 2 ; suture of bones of leg (ununited fracture), 4 ; suture of clavicle (ununited fracture), 1 ; suture of patella after division, 2 ; total, 46. Of the first group it need only be said that all have recovered well from the operation without any accident. I have made every effort to follow these cases up to date and have seen the majority a long time after operation. The results have been excellent. In some few a little limitation of movement has remained, but the limb has been firm and as far as could be made out the union of the fragments was osseous. In none so far has the wire appeared to give any trouble. Of several I possess skiagrams. These show that though the union is bony the adjustment of the fragments to one another was not always symmetrical. This has not appeared to unfavourably influence the movements of the joints, as, indeed, could hardly be expected, as little irregularities in the patella in rheumatoid arthritis do not always do so we know. Several of the patients were absolutely restored to as good use of the injured limb as though it had not

been damaged at any time. Those cases in which stiffness was noticed to any extent were past middle life and it was seen even in cases which had healed without reaction. On the whole I am very well satisfied with my subcutaneous method of suture for recent cases at any age. For fractures which have remained ununited, for months of course the open method will be required, but such cases will, I venture to think, become rarer and rarer as the simplicity and freedom from risk of the subcutaneous method is more fully recognised. Of old fractures of the patella there are 10 cases and of these 8 healed by first intention without any suppuration. Cases 2 and 7 suppurated, but not very seriously. The first was one of my earlier cases treated long ago and the suppuration was in the peri-articular structures. I saw the patient years later with an excellent movable knee and removed the knot of wire which was giving him some trouble. Case 7 was one of comminuted fracture of the patella, almost compound, with loose fragments which had to be removed. Those which remained were surrounded with a "purse-string" suture and thus drawn together. Some swelling followed and effusion into the tissues above the knee, but though I made incisions only serum escaped. The main cavity of the joint appeared to be quiet all the time, though the suture wound opened and the wire had to be removed in part. I have put this down as one of suppuration, as there certainly appeared to be some, and the wound yielded pus, though not to a large extent. I have lately seen the patient, who is well satisfied with the result. There is much stiffness in the knee, though I think this will pass off to a great extent in time. One of the last cases operated on was particularly interesting ; it was one of transverse fracture by very slight muscular action. But the joint was enormously swollen, and looked as if about to suppurate. I opened the joint by a curved incision with the convexity upwards—a method I have already published—and found a great deal of broken-down blood-clot, almost purulent, as one of my colleagues remarked. This was removed and the bone fragments brought together with one silver wire. The wound healed absolutely by first intention, and the patient left the hospital. Before he went he was discovered to have ataxic symptoms. Two months later he was admitted to the medical wards as a case of Charcot's knee, the joint having become greatly distended. As there appeared to be pus in it, it was opened by a colleague during my absence, and much broken-down purulent material was evacuated. It was then found that the wire had worked through the lower fragment and was loose. It was removed and the joint was drained. The man soon left the hospital healed, but with all the signs of ataxy, and has not since been seen. Had the condition which probably

favoured the fracture been recognised at the outset, I should not have operated. But the man was young, and the symptoms were not well marked at first. In all the eight cases where there was no trace of inflammation after the operation the results were admirable, and in the other two the state of the patients or their joints did not appear to be critical at any time.

Six recent fractures of the olecranon were wired, and with the exception of one which was compound and comminuted, the results as to movement were admirable. All healed *per primam*, even the compound case, but here there remained great stiffness. The woman was 53 years of age, and when the adhesions were broken down under an anæsthetic about a month after discharge from hospital the line of union in the fragments gave way in spite of the "purse string" silk suture. In the other cases the results were almost or absolutely perfect. And I have recently seen a blacksmith's hammerman whose broken olecranon I wired two and a half years ago with as strong and movable an arm as if it had never been broken. The method employed for some years has been to make an oval flap, drill the fragments transversely, and use wire, making the knob on the outside. In only one case so far has the wire given trouble. It irritated the skin, and had to be removed. In two cases I divided the olecranon as a preliminary to reducing old dislocations of the elbow. In one, a boy, aged 12 years, though firm union resulted there was considerable stiffness of the joint when he left hospital. He has not been seen since. In another, a woman, aged 56 years, whose dislocation dated from four months back, I divided the olecranon, reduced the dislocation, and primary union resulted. When last heard of the result bade fair to be perfect. In two cases the radius was cut down upon and wired for old ununited fracture. The first I have not seen since the operation; the last, a middle-aged woman, recovered with primary union and with good use of her arm. The clavicle united perfectly under one dressing, and all the symptoms were relieved. In two cases I divided the patella for access to the joint, and wired at once. The union was primary in both, without reaction, and the patients left for the colonies, much relieved in one case; the other was a private case, and was quite relieved. Of the four cases in which the bones of the leg were wired for ununited fracture, primary union took place in all, and the functional result was perfect in three. But in the first union had not taken place in the bones when last seen, and the patient cannot be traced. These results, as far as they go, appear to justify the belief that such operations, if done with extreme care, do not involve such risk as to forbid them.—*The Lancet, August* 20, 1898.

74.—A DISCUSSION ON INJURIES OF THE ELBOW-JOINT.

By Edward H. Bennett, M.D.,
Professor of Surgery in the University of Dublin.

[From Dr. Bennett's opening paper at Edinburgh meeting of the British Medical Association].

I believe that the defect we have to deal with lies in the surgery of the most common injuries of the elbow; our museums of surgical pathology and the personal experience of any surgeon conversant with injuries alike attest that errors of diagnosis are most frequently committed in dealing with fractures of the lower end of the humerus, including epiphysary separation and dislocations of both bones of the forearm backwards. Many causes conduce to these errors. First, the confusion of terms. The second difficulty that I have noticed is the rapid onset of swelling and tension which is unavoidable, and needs only to be mentioned now that I may preach the doctrine of charity, and be slow to condemn the errors of diagnosis which so often occur with those who see these injuries only after their details are almost hopelessly masked. The third point I have raised is the absence of any reference in many modern text-books to the incomplete dislocations of the bones of the forearm backwards. See how backward dislocation is described in one of the books I refer to:—"This injury is readily recognised by the projection backwards of the olecranon carrying with it the tendon of the triceps" (Erichsen). Again, "This dislocation is strongly marked by the great change which is produced in the form of the joint" (Cooper). "The olecranon," says Boyer, "is in this dislocation placed higher than the external condyle, instead of being on a level with it as it naturally is." "The olecranon process is noticed to project prominently far behind the elbow-joint" (Pick). "The inner condyle of the humerus and olecranon process being far apart" (Bryant). All these descriptions apply to the complete dislocation only. Now, if a surgeon but little conversant with injuries of the elbow falls back on one of these text-books to help him in dealing with an incomplete dislocation, these signs will fail him, and he will miss the diagnosis, leaving the dislocation unreduced. See how Littré deals with this matter:—"The incomplete dislocation is the only one in which the olecranon does not appear sensibly to change its place."

Again, Denucé says, "The forearm being in the third degree of flexion, the projection of the olecranon is on a plane sensibly inferior to the projection of the epitrochlea, whilst in the complete dislocation the olecranon is placed on a plane sensibly

superior." Is this distinction worth making? Is the incomplete dislocation a curiosity in the living? It is at least as frequent of occurrence as the complete, and in museums it appears to be the more common. I exhibit from the museum of Trinity College, Dublin, nine specimens of uncomplicated dislocations backward, of which five are incomplete and four are complete.

Lastly, with reference to the separation of the inferior epiphysis, I would briefly refer to the difficulty in determining the meanings of authors in the details of their descriptions, because their language is, as I have said, uncertain; for example, "the epicondyle preserves its normal relation to the olecranon." Which epicondyle? For the writer has started with the statement that there are two (Hutchinson, jun.). In none of the descriptions based on Professor Smith's writing, except those that quote verbatim his account, is there any mention of the peculiar deformity of the posterior aspect of the joint, the two tumours formed the one of the olecranon, the second by the displaced capitellum with the scale of cartilage which separates from the external condyle.

In discussing the subject of compound separation of the epiphysis with Professor Smith, he put this question to me:—How comes it that when the separation of the epiphysis is compound the elbow-joint escapes without suppuration? This question was put to me in 1869 before the days of antiseptic surgery, and is an expression of Professor Smith's experience. He told me as an anatomist to find the explanation, for he confessed that he could give none. The opinion expressed by Mr. Jonathan Hutchinson on this subject is very clear when he describes the excision of the end of the diaphysis as the proper treatment of a "compound fracture at the line of the epiphysis necessarily a compound fracture into the joint" (1866). Again, in the admirable analysis of the cases recorded up to 1893 we find his son expressing the same opinion:—"The epiphysis increasing so slowly in depth comes to lie more and more in the elbow-joint, and as a rule its detachment means a wound of, and more or less hemorrhage into, this joint." This view of the subject leads of necessity to the adoption of some such active surgical practice as complete or incomplete excision, and is directly opposed to the experience of Smith that the compound separation does not implicate the joint. I here present the cast of a limb which was injured in this way, the diaphysis being thrust through the skin and protruded some two inches, stripped of its periosteum. The artery of the limb was torn through and the wound suppurated freely, but the elbow-joint remained intact and preserved its movements almost without limitation. I think the explanation lies in this fact, that when the diaphysis is thrust out through the skin, it is displaced out of its sheath

of periosteum which intervenes between it and the synovial membrane and cavity. In the separation of epiphyses generally, both at the elbow and elsewhere, the lesion takes place between the cartilage of the epiphysial line and the diaphysis, and into this line the periosteum is directly inserted. In fact, the proper title would be dislocation of the diaphysis out of its periosteal investment. There may be exceptions to this rule, and such I have seen in experiment on the cadaver; but all experience goes to prove that the rule of the site of the lesion is very constant, and should certainly lead us to hold our hands from unnecessary resection of the diaphysis, for even under the least aseptic conditions the elbow-joint does not suppurate in the compound displacement.—*British Medical Journal*, *October* 29, 1898.

75.—DIABETIC GANGRENE.

By N. S. Davis, Jun., A.M., M.D., Professor of Principles and Practice of Medicine and of Clinical Medicine, North Western University Medical School, &c.

The following cases of gangrene associated with diabetes which have been observed by me during the last few years, inspired me to look through the rather meagre literature of the subject with care :—

[The details of three cases occurring in diabetes, aged 62, 62, and 58 respectively, are omitted here.]

The first and third cases typify well the milder forms of spontaneous gangrene in diabetics. The successive invasion of different toes in the last case is noteworthy. The diminution and even disappearance of glycosuria in both cases, while mummification existed and spontaneous amputation of the phalanges was progressing, is interesting. A similar marked diminution or disappearance of glycosuria I have observed in several cases when tubercular disease of the lungs was active. Both cases were upon diabetic treatment, which consisted mainly in a regulation of diet, the use of arsenical preparations, and at times opiates. The second case at first was one of *mal perforant*, which is an occasional complication of diabetes. Kirmission has reported seven cases of it associated with diabetes ; Duvernoy, four ; Gascuel, fourteen ; and Williamson, four. Gascuel found in ninety-one cases of *mal perforant* that it was associated fourteen times with diabetes. The association is evidently no more an accidental one than the association of

diabetes and gangrene proper. That there is a more frequent association of gangrene and diabetes than chance would cause was first pointed out by Marchel in 1852. Diabetic gangrene occurs much oftener in the legs and feet than elsewhere. Marchel makes note of thirty-five cases with the lesion below the knees, seven in the lungs, and three in the hands, out of a total of 133. In the remaining cases the lesions were very widely scattered. Hunt records three out of five cases of gangrene of the feet. In the cases which I find reported still more recently there is about the same proportional distribution of the lesion.

Sturgis has described an interesting case of gangrene of the lip in a diabetic of 64. Sloughing occurred, but the wound finally healed. For three years the secretion of saliva had almost ceased in this patient's mouth, a condition which caused him great distress. During the period of inflammatory reaction after gangrene had occurred on his lip, saliva formed once more in his mouth. In this case Sturgis calls attention to the great diminution of sugar in the urine after sloughing had occurred. Those cases of gangrene occurring in the course of diabetes which are associated with or superimposed upon inflammation, are undoubtedly chiefly due to the low vitality of tissues in diabetics, and the consequent ease with which putrefaction takes place in them. The frequency of gangrene of the lungs in diabetics, who also have tubercular or other disease of the lungs, can be accounted for in this way. The cause of spontaneous gangrene, which is not preceded by visible wounds or infection, is of more interest. Neuritis and atheroma have both been assigned as causes of the spontaneous gangrene of diabetics. Both lesions frequently accompany diabetes. Godlee admits two varieties of spontaneous diabetic gangrene, the one due to neuritis, the other to atheroma. He recommends amputation at the knee, or above, in all of the latter variety, and operation close to the point of necrosis in the former. Davies Pryce points to the almost constant coincidence of neuritis and atheroma in diabetes. Heidenhain's review of this subject is the most thorough of any in recent years. He believes that diabetic gangrene is in most, if not in all, cases due to arteriosclerosis. His statistics are quite convincing. According to him, spontaneous gangrene in diabetics is pathologically identical with senile gangrene. Heidenhain also calls attention to the very frequent occurrence, even in early adult life, of arteriosclerosis in diabetics. The cases which I have found reported are all in that period of life when this arterial lesion is to be expected. The only cases in earlier years of life are one, a girl of 19, in whom gangrene developed after an operation for cataract, and one of gangrene of the lungs in a child eight

months old. In many of the cases of diabetic gangrene on record no mention is made of the condition of the arteries. In all in which mention is made of the state of the arteries, arterio-sclerosis existed with one exception, which was a case described by Rosenblath. Very numerous areas of circumscribed necrosis occurred upon the skin and mucous membranes of this patient. No vascular lesions were discernible at autopsy. Hebb describes another noteworthy case, which shows that every time gangrene occurs in diabetics, it is not due to either neuritis or arterio-sclerosis in the affected limb. Gangrene of the right arm developed with the symptoms usually caused by embolism. At the autopsy it was found to be due to an embolus consisting of a vegetation which had broken from an atheromatous ulcer in the arch of the aorta. Arteritis was general, but beginning, not advanced.

Williamson thinks that perforating ulcer of the foot in diabetes is due to neuritis. He bases his belief on clinical, not post-mortem, evidences. Mild neuritis is extremely common in diabetes, and occasionally a severe form of lesion is demonstrable. In Case 2, frequently indescribable, uneasy and uncomfortable, but not painful sensations are felt in the legs. He had no knee-jerk. There may be evidences of mild neuritis. Most frequently neuritis and arterio-sclerosis occur together.

Hunt says that areas of gangrene in diabetics are mapped out by a less defined line of demarcation than in cases of senile gangrene. The literature of the subject does not corroborate this statement, nor do my own observations. Surgeons have been disinclined to operate upon diabetics because of their susceptibility to infection. Recent experience has shown, however, that amputations can be performed upon them with good success, provided only sufficient care is taken to prevent infection. Heidenhain recommends that if gangrene is confined to the toes the physician wait until a line of demarcation develops, and if there is no evidence of general infection, that the dead tissue be allowed to separate spontaneously. If, however, the sole or dorsum of the foot is involved, the leg should be amputated at the knee or above it. This is a rule which my reading convinces me is correct. I, however, think that amputation of the toe, after a line of demarcation has become well established, is preferable to the tedium and pain of spontaneous amputation. The greatest pains should be taken to gently remove the sloughing tissues, and by the free use of antiseptics to limit putrefaction. It goes without saying that the diabetes should receive as much attention as the gangrene. Treatment appropriate to it should be carefully carried out.—*Journal of the American Medical Association, July* 16, 1898.

76.—THE TREATMENT OF ANEURISM BY EXCISION OF THE SAC.

By Berkeley G. Moynihan, M.S. Lond., F.R.C.S. Eng., Assistant Surgeon, Leeds General Infirmary.

I have recently had under my care a case of aneurism of the third portion of the right subclavian artery, which I treated by excision of the sac. A second aneurism developed about one inch internal to the ligature, and burst after the lapse of fifty-nine days from the operation. I then ligatured the innominate artery, but the patient died about an hour afterwards from hemorrhage and shock. [The details of the case and of the operations, as well as other remarks, are omitted here. Mr. Moynihan thus concludes his paper:] The struggle for supremacy between the two methods, the method of excision and the method of distal ligature, is not unlikely to be a keen one, and, as the relative merits of the two are as yet by no means thoroughly sifted, it will, perhaps, be of service to state the comparative advantages of each. Much good work has been done in this direction by Professor Delbet. His first communication enumerated and contrasted the cases occurring up to the year 1888, and, in a further statement, he has examined and annotated the cases recorded up to 1895. The points of comparison and contrast are chiefly these:—(1) The mortality; (2) the recurrence after operation; (3) gangrene; (4) the "quality" of the recovery.

(1) *The Mortality.*—Upon this point Delbet's statistics are most interesting and worthy of all attention. In 1888 the percentage death-rate of the two procedures was, of ligature of the larger vessels, 18·94; of excision of the sac, 11·32. Between 1888 and 1895, of ligature of the larger vessels (109 cases), 8·33; of excision of the sac (86 cases), 0·00. Probably a larger proportion of cases of traumatic aneurism would be treated by excision.

(2) *Recurrence after Operation.*—This occurs in 5 per cent. of the cases after ligature. After excision, of course, it does not exist.

(3) *Gangrene.*—The proportion after ligature was, in 1888 = 7·58 per cent.; in 1895 = 8·25 per cent. The proportion after excision was, in 1888 = 2·94 per cent.; in 1895 = 2·77 per cent.

It is interesting to note that the statistics of the two series of cases up to 1888, and from then up to 1895, are almost identical. It cannot be, therefore, that stricter antiseptics and the general advance in surgical methods have made any difference in the number of cases of gangrene. Gangrene, then, has nothing to do with the technique of the operation, is not dependent in any way upon the personal experience or ability of the operator. What are its causes? It is suggested in an editorial in *The*

Lancet that one cause may be that "in ligature the artery is occluded at two points—namely, at the aneurism and at the point at which the vessel is tied—while in extirpation the continuity of the artery is destroyed at only one spot—namely, where the aneurism is situated;" an explanation which is not wholly satisfactory. Insufficiency of the collateral circulation is one, and the most spontaneous in our thoughts, of the likely causes, but it is a matter of common knowledge that gangrene occurs after the lapse of many days—ten, fifteen, or even more—and in such cases a want of the enlargement of the anastomosing collateral vessels cannot be the cause. In such as these it is most probable that the gangrene is embolic, due to the carrying onward of clots formed, as a result of the ligature, in the sac, or perhaps between that and the occluded point. The newly developed or enlarged anastomoses bring to the vessel on the distal side of the ligature a stream of blood sufficiently strong to carry forward in its current one or more, perhaps a shower, of small broken-down fragments of clot which block the lumen of the smaller vessels when these are reached. If this explanation is correct, and it is at least a plausible one, it would afford an argument also in favour of extirpation of the sac as against ligature. If the sac be removed, the chief nest of these small embolic clots is withdrawn, and the possibility of subsequent gangrene reduced to a minimum. But more than this. In the case of ligature of vessels it is, I suppose, an accepted truth that the further the ligature from the aneurism the more likely is gangrene to follow, and, conversely, the nearer the ligature the less likely. If, then, the sac is excised the deligated point is within an inch or so of the sac, and consequently the rudiments of the collateral circulation are much less likely to be interfered with. From this point of view, then, and accepting these reasonings, there can be no manner of doubt that the argument favours the more radical method of treatment; gangrene being about three times more frequent after ligature as after extirpation.

(4) "*Quality*" *of the Recovery.*—The trophic disturbances seen in connection with aneurismal swellings are due, not so much to the mere pressure on nerve-trunks, as to the actual involvement and embedding of the nerve in the adventitious wall of the sac. Delbet has referred to cases where, after the operation of ligature, the aneurism being "cured," amputation of the limb was necessary, owing to the persistence of trophic disturbances, and to others where, after similar operations, the member remained a palsied and a useless one. If the sac is removed without immediate danger to the nerve, these neuropathic troubles, trophic changes, palsies, and pains would in all likelihood disappear.

A patient, then, subject to excision of the sac as compared with distal ligature has (1) a far greater chance of recovery from the operation; (2) no risk of recurrence; (3) a far less risk of gangrene; (4) a probable complete recovery from any of those affections due to nerve interference. It is not unlikely, therefore, that in the next few years the operation of excision will increase in general favour, and will be performed in a larger number of cases than heretofore; and it is not unwise to predict that in a very large proportion of cases of aneurisms of all kinds it will be, by the vast majority of surgeons, the operation of their choice.—*Annals of Surgery*, *July*, 1898.

77.—CARIES OF THE SPINE: MODERN METHODS OF TREATMENT.

By Noble Smith, F.R.C.S. Edin., L.R.C.P., Lond.,
Surgeon to the City Orthopædic Hospital; Surgeon to All Saints' Children's Hospital.

[The following cautious statement will commend itself to many:]

During recent years this disease seems to have been selected by surgeons for experimental and violent methods of treatment. The excitement produced among the public by the circulation in the lay press throughout the world of M. Calot's revival of "forced reduction of the deformity" has scarcely subsided when it is proposed that every case of caries should be operated upon with the view of removing the tuberculous bone. This suggested operation is based apparently upon the following assertions:—Firstly, that sufficiently good results cannot be obtained by other methods; and, secondly, that it is desirable to remove every portion of diseased bone in tuberculous osteitis. I will endeavour to controvert both these contentions. First, if the spine be fixed thoroughly by means of an efficient apparatus such as I have frequently described, and gradually or rapidly extended in accordance with the comfort of the patient, the adjustments being made with careful accuracy by the surgeon himself and the health of the patient maintained by proper food and medicine, almost every case of caries of the spine will be cured. Operations are undoubtedly called for in a considerable number of cases, and occasionally it may be desirable or necessary to cut down upon diseased parts and remove pieces of necrosed bone, or give vent to the contents of a chronic abscess. Should an abscess appear it is desirable to open it up as soon as possible, and to scrape it out, and, in fact, to adopt the methods of modern surgery in the treatment of chronic abscesses as far as possible. If this plan of treatment be carried out it may be

confidently expected that every patient whose health has not been already undermined by the disease, or, in other words, every patient who has not become the subject of general tuberculosis, will be cured. In no case where I have been able to carry out this treatment thoroughly has there been any increase in the deformity after the treatment has been commenced and in the large majority the deformity has been reduced. The experience of such results gives me reason for dissenting from the assertion that other methods than that of extended operation have not been successful. Secondly, with regard to the removal of the tuberculous bone it has not yet been proved that we can define with certainty the exact area to which the disease is limited, and even if we could define this area the operation would not prevent further occurrence of disease in other parts after we had removed that which existed. It is only necessary to examine pathological specimens of spines affected with this disease to realise the almost insuperable difficulty of removing even that portion of the bone which is obviously diseased, and as to taking away every part which may be involved the accomplishment is practically impossible.

The author then refers to a specimen in St. Bartholomew's Hospital, and gives an illustration. It consists of a vertical section of a portion of the spine, including the fifth dorsal to the second lumbar vertebra. Between the tenth and eleventh dorsal vertebræ there is destruction of bone leading to angular deformity, but in other parts of all the vertebræ shown, hollow spaces, more or less cup-shaped, exist. This is doubtless an exceptional specimen, but even when there is far less implication of the bones the removal of the diseased parts may still be unattainable.

In dealing with tuberculous disease we have to conduct a contest between the nutrition of the patient and the disease, and it is of the first importance to render the soil unfit for the tubercle bacilli. Improvement in the patient's vitality will overcome the bacilli, and perfect fixation will permit local repair to take place. This is surely a well-established doctrine, and it has been proved to be true in practice. There can, of course, be no doubt, speaking generally, that in cases of degenerated and broken-down tuberculous bone the sooner and more completely it is removed the better. In caries of the spine this can be effected by the early opening of abscesses and their treatment as above referred to, and sometimes by more extensive operations for removal of bone, but to cut down upon every diseased spine and attempt to remove all affected osseous tissue is a plan of treatment which can hardly commend itself to cautious surgeons. Further, to remove the laminæ and pedicles for the purpose of approaching the diseased parts is to remove

those portions of the vertebræ which are, as a rule, alone free from disease, and upon which we should rely for maintaining the stability of the spinal column during the process of repair.—*The Lancet, August* 27, 1898.

78.—THE TREATMENT OF INOPERABLE SARCOMA WITH THE MIXED TOXINS OF ERYSIPELAS AND BACILLUS PRODIGIOSUS.

By William B. Coley, M.D., Attending Surgeon to the New York Cancer Hospital.

[From Dr. Coley's paper :]

Duration of treatment.—It is possible in most cases to tell within a comparatively short time whether or not the toxins are likely to be efficacious. If no improvement is noted at the end of three weeks, there will be little use in continuing the treatment. In many cases marked improvement is seen within a week after the first injection. If improvement occurs, the treatment should be kept up until the tumour has disappeared or until it is evidently again increasing in size.

Dangers.—The question of the cumulative action of the toxins, if the treatment be long continued, is an important one. The toxins are rapidly eliminated, and that no harm is likely to result from prolonged treatment is evidenced by the following cases :—In one case the toxins were administered steadily two or three times a week for a period of two and one-quarter years ; the patient gained ten pounds in weight and remained in perfect health the entire time. In a second case the treatment has been continued, with few intervals of rest, for a period of nearly four years, with no ill effects. I have personally had two deaths from the treatment, and I have known of six others in the hands of other surgeons.

Review of cases thus far treated.—Out of a total of 140 cases, 84 were round-celled ; 21 spindle-celled ; 6 mixed ; 9 melanotic ; 2 chondro-sarcoma ; 6 sarcoma, in which the clinical diagnosis was not confirmed by microscopical examination ; 12 sarcoma, in which the type of cell was not stated, though the diagnosis of sarcoma was confirmed by microscopical examination. Of the 84 round-celled sarcomata, 35 were more or less improved ; 3 disappeared entirely, 1 patient remaining well upward of three years, 1 at present well one and one-half years, and the third well at the end of one year, since which time he was not traced. Of the 21 spindle-celled, 10 disappeared and all the others showed marked improvement. Of the 6 mixed-celled, 3 improved ; 2 were unimproved ; 1 disappeared, and the patient

remained well for three and one-quarter years, at the end of which time there was a recurrence in the abdomen, which proved fatal after six months' time. Of the 9 cases of melanotic sarcoma only 2 showed slight improvement, the remainder being unaffected by the treatment. One large chondro-sarcoma disappeared, recurred at the end of seven months, and finally proved fatal; the other was slightly improved. Of the 12 cases in which the type of cell was not known, 6 were improved, 5 unimproved, and 1 tumour disappeared. Of the 6 cases not confirmed by microscopical examination, 2 osteosarcomata disappeared, 2 improved, and 2 remained unimproved.

Summary of results.—Well over three years, 8 cases; well from one to three years, 9 cases; well from six months to one year, 4 cases; recurred after having once disappeared, 4 cases—2 of these patients died, 2 are still living in good health after further treatment.

Successful cases treated by this method by other surgeons.—From published reports and personal communications, I have been able to collect 35 cases of inoperable sarcoma in which the tumour completely or very nearly disappeared as a result of the treatment in the hands of other surgeons. In 26 of these cases the tumour entirely disappeared. Of the total number, 10 were spindle-celled; 11 were round-celled (1 giant-celled); 1 myxosarcoma, and 1 endothelial sarcoma; in 10 cases no microscopical examination was made, though careful examination by a number of surgeons rendered the clinical diagnosis scarcely open to question. In the remaining cases the diagnosis of sarcoma was confirmed by microscopic examination, but type of cell not stated. In addition, in 5 of these 9 cases there was a history of recurrence after operation. Of the 34 cases, 9 are now well upward of three years; 9 from one to three years; in 6 cases the disease recurred in other regions of the body at varying intervals of from six months to two years after the disappearance of the primary growth. This latter fact alone—that the disease recurred elsewhere—is sufficient to establish the correctness of the original diagnosis of sarcoma.

Conclusions.—A careful study of my own cases, as well as those thus far treated by other surgeons, justifies, I believe, the following conclusions which, I might add, are in almost perfect accord with those recently published by Moullin:—(1) A considerable number of inoperable sarcomata, the correctness of the diagnosis of which is beyond question, have entirely disappeared under this method of treatment. (2) A large proportion of these cases have remained free from recurrence more than three years after treatment—the period which has generally been accepted as of sufficient length to justify their being regarded as permanent cures. (3) Different varieties of

sarcoma differ widely as regards the manner in which they are acted upon by the toxins. The results thus far show the treatment to be most successful in the spindle-celled variety, one-half of the spindle-celled sarcomata so far treated having disappeared. Round-celled sarcomata yield less readily, although a certain number have been successfully treated. No case of melanotic sarcoma has, up to the present time, shown more than slight improvement. (4) The action of the toxins upon sarcoma must be regarded as a rapidly progressing necrobiosis with fatty degeneration. This action is not the result of inflammation, nor does it resemble the destructive action of a local escharotic, but it is rather specific in character, exerting a direct influence upon the tumour cells. (5) The specific action is further confirmed by the fact that several tumours have entirely disappeared when the injections were made subcutaneously remote from the tumour. (6) This method of treatment is attended with a certain amount of risk, unless certain precautions are taken. The chief dangers to be guarded against are:—(*a*) Collapse from too large a dose of the toxins or from injections into a very vascular tumour; (*b*) pyæmia from insufficient precautions as regards asepsis, especially in cases in which there is a granulating or sloughing surface. (That the risks are small is shown by the fact that in upwards of two hundred cases treated personally death was caused by the injections in but two, one of which was so nearly moribund that no treatment should have been begun.) (7) The use of small doses of the toxins for a short period after primary operation, as a prophylactic measure, theoretically has much to recommend it, and if proper precautions be observed the treatment should be practically free from risk. (8) The action of the toxins of erysipelas upon sarcoma, as shown by clinical results, is in strict accord with the known action of the living streptococcus of erysipelas; therefore the method has a perfectly logical and scientific basis. I wish to express my great obligations to Dr. B. H. Buxton, of the Loomis Laboratory, whose skill and unremitting labours in preparing the toxins have made the results here reported possible.—*Medical Record, August* 27, 1898.

79.—TONSILLOTOMY—WHEN AND HOW TO MAKE IT.

By J. M. Crawford, M.D., Atlanta.

[From Dr. Crawford's paper:]

Tonsillotomy should be resorted to when the tonsils extend much beyond the pillars of the fauces, not waiting until they

touch each other, especially where aural catarrh exists. It is indicated even when the tonsil is slightly hypertrophied, if the lacunæ are inclined to inflame from collections of caseous secretions. Shaving the tonsil destroys these lacunæ, thereby preventing this frequent and painful inflammation. Below the age of 15 the tonsil is usually soft, and when cut, as with the tonsillotome, the cut edges are more or less mashed or pressed together, thereby stopping the hemorrhage. In older persons, however, the tonsil is more fibrous. The walls of the cut vessel are pulled apart, as it were, by the firmness of the tonsil itself. I would not hesitate, however, to make the operation, when it was needed, even in the oldest. Fortunately, after a certain age the tonsils atrophy and require to be removed rarely. Fewer cases of hemorrhage occur when the operation is made with the tonsillotome instead of the vulsellum forceps and bistoury. When using the bistoury and forceps one is apt to pull the tonsil with his forceps too much. In such a case he knows not where he is cutting. On completing the operation and looking into the mouth of the patient he sees a sulcus, where a portion of the tonsil should have been left. A sulcus, besides endangering the life of a patient by hemorrhage (so much of the tonsil being removed), is a source of constant annoyance, in that it is a lodging place for food, &c. The tonsillotome makes a clean, straight cut on a level with the pillars of the fauces. The bistoury, by its to-and-fro motion, leaves the cut surface jagged. There is much less pain in operating with the tonsillotome. I would advise you never to use the forceps and bistoury. I prefer Mackenzie's tonsillotome or some of its modifications to all others. It is more simple, more easily managed, and less cumbersome. I much prefer this instrument to the various barbed instruments now on the market. There need be no fear of the tonsil falling into the larynx, as it nearly always adheres to the instrument. Where it does not adhere to the instrument it falls in the mouth and is expelled. By applying a little cocaine (a 6 per cent. solution is quite sufficient) to the tonsils and fauces you allay the sensibility of the throat, which is a great aid in the operation. Be sure that your instrument is over the tonsil just where you wish the incision to be made, then push the blade to its destination.

You will find your patient allows you to remove the first one with a great deal more readiness than the last one. Keep your patient quiet for thirty minutes to see if excessive hemorrhage is going to take place. Should this occur you have a safe hæmostatic in the cautery. Now, should the operation have been made with the bistoury, and the deep sulcus of which I have already spoken existed, you would not be able to see the

bleeding point, and hence would be debarred from this effective means of arresting the hemorrhage. In this case pressure upon the cut surface with a pledget of cotton will, if diligently used, cause the hemorrhage to cease. This is a very trying procedure, both on the patient and the doctor. I have used this method and know by experience how trying it is. During my stay with Dr. Calhoun, as assistant, I can recall five or six cases of frightful hemorrhage from tonsillotomy made by him with the knife and forceps. In each case the hemorrhage was stopped by my putting a wet sponge or pledget of cotton on the cut surface and applying pressure. In each of these cases the sulcus existed, making it impossible for me to see the bleeding artery and forcing me to resort to the only safe method for such cases, to wit, pressure. I do not say I was the first one to use pressure for this trouble, but I do say that the idea was original with me in employing it. Thus we sometimes meet with difficulties in making this operation. We have, however, at our command, as I have already stated, two means for arresting the hemorrhage: The cautery, when the bleeding point can be seen; in other instances, apply pressure.—*Journal of Laryngology, September*, 1898.

80.—THE OPERATIONS OF LARYNGOTOMY AND TRACHEOTOMY.

By Harry Littlewood, F.R.C.S. Eng.,
Honorary Surgeon, General Infirmary, Leeds.

Both these operations have at times to be performed under circumstances of the greatest difficulty, and often single-handed. It is thought that any suggestion to facilitate the performance of these operations may be worthy of some consideration. In most of the text-books it is assumed that the operator has a good supply of assistants. As this is often not the case, how can these operations be performed without any help, or with only the partial help which may be rendered by the anæsthetist? Before doing either of these operations the patient is placed in the dorsal position, with the neck extended and the head fixed in the middle line; the landmarks are then quickly felt—hyoid bone, thyroid and cricoid cartilages.

Laryngotomy.—The left forefinger is placed on the mid-point of the crico-thyroid space, and the upper border of the cricoid cartilage distinctly felt. A broad scalpel held laterally in the right hand, protected by the finger placed half an inch from the point, is thrust through the middle line, at the level of the upper border of the cricoid cartilage, into the larynx. As the scalpel

is withdrawn the outer tube is passed into the opening and then the inner tube. As a rule, the opening made is about the same size as an ordinary laryngotomy tube. I have never seen any trouble with hemorrhage. I first saw the operation performed by the late Mr. A. F. McGill, and since then I have performed the operation a number of times without any help. I have not seen the operation described anywhere.

Tracheotomy.—Using Spencer Wells's forceps instead of blunt hooks or retractors. In performing this operation single-handed, an incision is made in the middle line of the neck for about two to two and a half inches from about the level of the lower part of the cricoid cartilage; the longer incision is required when there is a good deal of subcutaneous fat. The skin, subcutaneous tissues, &c., are divided, avoiding the anterior jugular veins, and the interval between the sterno-hyoid muscles is found. The edges of these muscles are caught with one or more pairs of Spencer Wells's forceps; the handles of these, falling outwards, pull the muscles apart, so that it is unnecessary to use either blunt hooks or retractors. The left forefinger is now placed in the wound and the rings of the trachea distinctly felt; the deep fascia over it is divided, and the trachea hooked up with a sharp hook, put in just to the right of the middle line about the level of the third or fourth rings, and the trachea pulled forwards. The trachea is then opened in the middle line by dividing two or three rings from below upwards, having the scalpel protected by the finger so as not to wound the other side of the trachea. By pulling the trachea forward with the hook the tube can now be easily passed by pressing it against the left side of the opening, or some dilators can be passed and the tracheal incision held open. The Spencer Wells forceps are most useful as retractors if the operation has to be performed without any assistance.—*Treatment, May* 27, 1898.

81.—RECENT EXPERIENCES IN MILITARY SURGERY AFTER THE BATTLE OF SANTIAGO.

By Lieut.-Col. N. Senn, M.D., U.S.V., Chief of Operating Staff with the Army in the Field.

[From Dr. Senn's paper.]

Wound Infection.—The many failures in protecting the more serious wounds against infection are attributable to three principal causes:—(1) Inadequate supply of first dressings; (2) faulty application of first dressing; (3) unnecessary change of dressing. Our military surgeons must learn to realise the

value and importance of the first-aid dressing. In all cases in which the first examination does not reveal the existence of complications which require subsequent operative treatment, the diagnosis tag should convey this important instruction:—"Dressing not to be touched unless symptoms demand it." Such instruction is significant, and must be followed to the letter by all surgeons in subsequent charge of the patient. I am satisfied more than ever of the necessity of including in the first-aid dressing-package an antiseptic powder. For years I have used for this purpose a combination of boric acid and salicylic acid, 4 to 1, with the most satisfactory results. I am also partial to sterile absorbent cotton in place of gauze for this particular purpose, as it constitutes a more perfect filter than the loose gauze. A teaspoonful of the powder mentioned dusted on the wound forms with the blood that escapes and the overlying cotton a firm crust which seals the wound hermetically. Should the primary dressing become saturated with blood, the same powder should be dusted over the wet dressing and an additional compress of cotton be added to the dressing. After the first dressing has been applied it should not be removed, except for good and substantial reasons. Much can be done in the after-treatment in the way of readjusting the bandage and in immobilising the injured part, but the first dressing must remain unless local or general symptoms set in, which would warrant its removal. Malaria and yellow fever, that crept in upon us so insidiously, are responsible for many unnecessary changes of dressing. The appearance of fever in a wounded man naturally leads to the suspicion that there is something wrong in the wound. Many dressings were changed on this ground; nothing abnormal was found in the wounds, and a day or two later the nature of the fever was recognised, and the patients were either given quinine or were sent to the yellow-fever hospital, in accordance with the final diagnosis made. Every change of dressing, more especially in military practice, is attended by risk of infection, and must be scrupulously avoided unless local or general symptoms indicate the existence of complications which demand surgical intervention.

The Value of the X-Ray in Military Practice.—The value of the probe as a diagnostic instrument in locating bullets has in modern military service been almost entirely superseded by dissection and the employment of the X-ray. If from the nature of the injury and the symptoms presented the bullet is located in a part of the body readily and safely accessible to the knife, and it is deemed advisable and expedient to remove it, this can often be done more expeditiously and with a greater degree of certainty by enlarging the track made by the bullet than by relying on the probe in finding and on the forceps in

extracting the bullet. If, as is often the case, the whereabouts of the bullet is not known, its presence and exact location can by the use of the X-ray be determined without any pain or any additional risks to the patient. All of the bullets removed on board the hospital ship *Relief* were located in this manner. Dr. Gray, an expert in skiagraphy, who has charge of the scientific work of the floating hospital, has been of the greatest service to the surgeons in enabling them to locate bullets and in guiding them as to the advisability of undertaking an operation for their removal. His large collection of skiagraph pictures will also furnish a flood of new light on the effect of the small-calibre bullet on the different bones of the body. Dr. Gray's work will constitute an essential and enduring cornerstone of much needed modern work on military surgery. The skiagraph has enabled us to diagnosticate the existence or absence of fractures in a number of doubtful cases in which we had to depend exclusively on this resource. In fractures in close proximity to large joints the X-ray has been of the greatest value in ascertaining whether or not the fracture extended into the joint. In one case of gunshot wound at the base of the thigh, in which the bullet passed in the direction of the trochanteric portion of the femur, opinions were at variance concerning the extent of injury to the bone; some of the surgeons made a diagnosis of fracture, while others contended that there was no fracture, but believed that the bullet had made a deep groove in the anterior portion of the bone, and had possibly opened the capsule of the joint at the same time. The X-ray picture clearly demonstrated the absence of fracture and the existence of a deep furrow with numerous fragments on each side. The X-ray apparatus also proved of the greatest practical utility in showing the displacement of fragments in gunshot fractures of the long bones, and enabled the surgeons to resort to timely measures to prevent vicious union. The fluoroscope has greatly added to the practical value of skiagraphy. In the light of our recent experience the X-ray has become an indispensable diagnostic resource to the military surgeon in active service, and the suggestion that the chief surgeon of every army corps should be supplied with a portable apparatus and an expert to use it must be considered a timely and an urgent one.—*Medical Record*, *July* 30, 1898.

NERVOUS SYSTEM.

82.—A CASE OF TEMPORO-SPHENOIDAL ABSCESS; TREPHINING; RECOVERY.

By Herbert J. Roper, M.R.C.S. Eng., L.R.C.P. Lond.; and H. Littlewood, F.R.C.S. Eng.

A girl, aged 14 years, had had a purulent discharge, which latterly had been offensive, from the left ear, for two years. She came of an unhealthy stock, her father and mother being distinctly delicate and her grandmother showing scars all over her body, the result of necrosis of bone, probably syphilitic. On June 11, 1897, she complained of severe pain in the left ear and corresponding side of the head, which nothing appeared to alleviate. On June 13 the headache was still intense, but the earache had ceased. There was only a slight rise of temperature —generally about 101° F. On June 14 she was practically free from pain, and on the following three days it was noticed that her memory was defective for common objects in the room. She was unable to name a spoon, fork, knife, chair, &c. As soon as the word was mentioned she recognised it and could pronounce it, but she forgot it again almost immediately. A slow pulse (50) and occasional vomiting were her other symptoms. On June 23 her temperature was 101°, her pulse was 56, and her respirations were 12. She was drowsy and wished to be let alone. When roused she was childish in her manner and voice, quite different from her usual condition. She remembered dates well, but could not tell the name of any of the surrounding objects in the room. She had taken a dislike to many people of whom she had previously been fond, and would have nothing to do with them. There was no disturbance of sensation or power of movement on either side. Optic neuritis was present on both sides. The ear was being carefully syringed with an antiseptic lotion, and there was no discharge perceptible. The next day, however, the ear began to "run," but she was more drowsy than the day before, and the vomiting persisted and grew worse. On June 25 the temperature was normal, the pulse was still slow, but she was not so drowsy. During the day, though, the drowsiness increased and became more and more pronounced during the following three days, until it resolved itself into coma. She took nourishment fairly well, retaining some. On June 27 and 28 she passed urine and fæces into the bed. The temperature continued normal. During June 29 the right arm became strongly flexed and remained motionless in that condition. On June 30 she was comatose,

but still able to swallow liquids; the right arm was paralysed and the right leg was much weaker than the left. I strongly advised operation at this stage, to which the parents readily consented. Mr. Littlewood at my request performed the operation. I administered ether, of which very little was required. Mr. Littlewood, assisted by Mr. F. E. Taylor, first exposed the mastoid process by a semilunar incision down to the bone, and by chiselling opened the antrum until there was a free communication with the external auditory meatus. Some purulent material was found, and the cavity was cleansed. He next dissected back a large semicircular flap, and then proceeded to trephine over the petrous portion of the temporal bone. On pressing aside the dura mater the anterior surface of the petrous bone was well exposed, but nothing was found here. The dura mater was perfectly healthy. Mr. Littlewood then proceeded to remove bone in a backward direction with Hoffmann's cutting forceps until he had exposed the membranes over the temporo-sphenoidal lobe. He then opened the dura mater and exposed the brain, which bulged out and did not pulsate. With a large trocar (Macewen's) he punctured the brain, and immediately very offensive, thin, yellowish-green pus, with thick flakes of lymph floating in it, rushed out. The trocar was withdrawn, and Mr. Littlewood plugged the opening with his finger in order to allow the pus to escape slowly, so that the intracranial pressure might not be too rapidly reduced. When the pus had all escaped the cavity began at once to shrink. This was then well washed out with boiled water by means of a syphon. Several large flakes of lymph came away with the water which returned. The large scalp-flap, which had become soiled by the discharge, was well washed with boiled water and afterwards with weak carbolic lotion. A drainage-tube was inserted into the abscess cavity, and the flap was stitched up with silk sutures. The antrum was packed with iodoform gauze, and a dressing of boric wool was applied over the whole. The condition of the patient at the end of the operation was wonderfully good; the extremities were warm and the pulse was 120 and fairly full. Before we left the house she moved her right arm. At 9.30 the patient was asking for food. Milk and soda-water in small quantities were given. On July 1 she had a fairly good night. She moved her arm quite well, and her mental condition was distinctly improved. Her temperature was normal, and her pulse was 120. There was no pain. She asked for solid food. The dressing was changed. She had been asking her mother if the knocking had ceased, which appeared to refer to the chiselling. On July 2 the temperature was subnormal. The patient was bright and cheerful, but still amnesic. She took nourishment well. Hernia

cerebri had formed. On July 4 the tube was removed, and the scalp wound had nearly healed. The hernia continued to increase in size for some days until it was of the size of a Tangerine orange, when it slowly began to shrink. On July 22 she sat up for a short time daily, and was able to read and remember names of objects much better, though she still made mistakes. The antrim was filling up. Pressure was applied to the hernia after a time by means of a piece of thin sheet lead shaped to the hernial protrusion. After this it rapidly decreased in size, and towards the end of September disappeared altogether, and the wound healed over. The patient's memory gradually improved, and now is almost normal. At the present date (March 10, 1898) she is remarkably well in every respect.—*The Lancet, September* 24, 1898.

83.—ON TENDON GRAFTING IN THE TREATMENT OF INFANTILE PARALYSIS.

By Frederic Eve, F.R.C.S., Surgeon to the London Hospital and to the Evelina Hospital for Sick Children, &c.

[From Mr. Eve's paper.]

The technique of the operation of tendon grafting must necessarily vary with the muscles paralysed, the position of the foot being determined by their antagonists. Although each case requires separate consideration, and scope exists for the exercise of ingenuity, yet useful facts may be learnt from practical experience and the study of published cases. Some one group of muscles must at least be possessed of a fair amount of power, in order that the requisite force may be obtained. Cases of flail-like joints, in which all the muscles are paralysed, are only suitable for arthrodesis. It may be laid down as a general rule that in selecting a muscle for grafting the one should be chosen whose action is most nearly allied to that of the paralysed muscle or group, not only because such muscles are nearest, but also because restoration of voluntary function is more readily obtained. But the converse of this is sometimes, in my opinion, advisable; and we may select an antagonist of the paralysed muscle. Thus in paralysis of the tibialis anticus with valgus, we may attach to it the peroneous longus, with a view to weakening the action of the muscles whose uncontrolled contraction is producing the deformity. It must also be stated that before the operation we are considering is carried out any faulty position of the foot must be rectified by manipulation, the application of plaster splints, &c. Talipes

cavus will require preliminary operation in some instances. The equinus so often existing should be corrected either before or at the same time as the operation of grafting. In two of my cases I elongated the tendo Achillis—as I think now, unwisely—at a period subsequent to the grafting operation. This I did by what is termed the Z method. This consists in splitting the tendon longitudinally and cutting outwards through the lateral strips in opposite directions at the upper and lower ends of the incision in it. The lateral strips are then approximated and sutured together in such a way that the tendon is elongated to the required extent. This operation has previously, I believe, been chiefly, if not entirely, employed for shortening the tendo Achillis in cases of talipes calcaneus.

[Cases are then given of (1) paralysis of the external popliteal nerve, (2) talipes equino varus, (3) paralysis of the extensor longus digitorum and tibialis anticus, and (4) equino-valgus thus treated.]

In the somewhat unusual event of single muscles being paralysed, less complicated procedures are necessary. Thus, the extensor longus digitorum may be reinforced by the extensor hallucis and half the tendon of the tibialis anticus. In paralysis of the tibialis anticus alone, Vulpius suggests that the displacement of muscles should be gradual, that is, that half the extensor longus digitorum should be attached to the tibialis anticus, the former being again strengthened by suturing to it the peroneus brevis. In peroneal paralysis the outer third of the tendo Achillis may conveniently be taken as a graft, and to this may be added, if necessary, the outer portion of the extensor longus digitorum. I have not yet treated by "function transference" a case of talipes calcaneus.

Goldthwaite's plan of uniting the tendons was carried out in all cases. This consists in splitting longitudinally with a tenotomy knife the tendon of the paralysed muscle, and drawing the divided tendon of the functioning muscle through the hole thus made, union being effected by three or four sutures passed through both tendons. In all the five cases upon which I have operated, the wounds have healed by first intention, there has been no sloughing of tendons, and the union in all cases has been firm, as shown by the application of the faradic current to the "force-giver." The tendon of the paralysed muscle is always slender and atrophied. It is therefore inadvisable to divide or to split it (as has sometimes been suggested), since these procedures are liable to interfere with firm union between it and the graft. It may, however, in some instances be necessary to divide the power of the force-giver by splitting its tendon. The improvement effected by this operation is brought about in a variety of ways. Where

the action of the graft or functioning muscle is nearly allied to that of the paralysed one, which it enforces, the patient is soon able to accomplish voluntarily the new movement. Other factors also come into play in furnishing the patient with a firm base of support adjusted to the normal position. In the first place, the graft or functioning tendon acts mechanically as a supporting band, applied where it is most required, to the ankle and foot. Secondly, if one or more of the contracted antagonists be selected for reinforcing the paralysed muscles, the antagonists are weakened, and the deformity is thus treated as by tenotomy. Thirdly, the involuntary contraction, on placing the foot to the ground, of the functioning muscles used as grafts, and acting in the required direction, gives the foot the necessary firmness, even although the patient cannot voluntarily accomplish the movements normally performed by the paralysed muscles. That the force-giving muscles can really be made to perform the movements of the paralysed ones may be demonstrated by applying the faradic current to their motor points. The operation of function transference has also been applied to contractures of the wrist, resulting from infantile paralysis; and a healthy sartorius has been used to strengthen a paretic quadriceps extensor.

Dr. A. A. Eulenburg has also employed the method in the treatment of cases of spastic cerebral paraplegia.—*British Medical Journal, October* 15, 1898.

ALIMENTARY CANAL.

84.—TWO CASES OF HALFPENNIES IMPACTED IN THE ŒSOPHAGUS FOR FIVE AND SIX MONTHS RESPECTIVELY, REVEALED BY X RAYS AND REMOVED.

By A. W. Mayo Robson, F.R.C.S. Eng., Senior Surgeon to the General Infirmary at Leeds;
Professor of Surgery in the Yorkshire College of the Victoria University.

The following unusual cases came under my observation quite independently of each other within the same week, and were treated by me on consecutive operating days in the Leeds

General Infirmary :—*Case 1.*—A boy, aged 4 years, was sent to me by Mr. H. Keighley and Mr. J. H. Woods, of Batley, with the history that six months previously he had swallowed a halfpenny, and at the time had almost died from suffocation, which was prevented by his mother's presence of mind in pushing the coin beyond the entrance of the larynx by means of her finger. The coin was supposed to have passed into the stomach, as, although he had some pain in swallowing, there was no actual obstruction to the passage of food. Some weeks after he began to have pain in his neck, to have difficulty in swallowing, and to hold his head stiffly to the left side, almost as if he had caries of the cervical spine. He began to lose flesh and to look ill. It was then decided that he should be photographed by the Roentgen rays. The photograph (by Messrs. Reynolds & Branson, of Leeds) was brought with the patient, and it showed the coin impacted in the œsophagus at a point opposite the pericardium, where it would also be in close contact with the left pleura and with the aorta. I decided to attempt its removal through the patient's mouth, and, that failing, I obtained permission to perform œsophagotomy. It was explained to the parents that there might be risk of hemorrhage or perforation in removing the coin from its bed, but they decided to accept all eventualities. On February 18, the patient being under ether, I inserted the coin-catcher invented by the late Mr. Sam Smith, and at the first introduction I withdrew the halfpenny without any difficulty. It was much corroded and covered with greenish-black material. Nothing untoward occurred, and the boy left the infirmary quite well the next day. *Case 2.*—The patient was also a boy, aged 5 years, and the photograph showed the coin in the same position as in Case 1. The same treatment was adopted, and with the same result.

The "coin-catcher" is a most ingenious instrument with which I have removed coins recently swallowed on other occasions, and as it is so simple in action and so painless in application it should in any doubtful case be applied as soon as the patient comes under observation. In cases of doubt the new photography can be employed with great advantage, as shown in the two examples I have related. I noticed a report in one of the journals lately that in a similar case, where the coin had been swallowed only a short time previously, œsophagotomy was performed without any attempts being made to remove it through the mouth. My experience would lead me to conclude that such an operation should rarely be necessary, and could only be justifiable after the simple means I have related had been thoroughly tried and had failed.—*The Lancet, July* 16, 1898.

85.—THE TREATMENT OF SEVERE INJURIES TO THE ABDOMEN WITHOUT EXTERNAL WOUND.

By Marmaduke Sheild, F.R.C.S.

The author discussed the treatment of abdominal injuries not associated with external wound. He pointed out that the rules of practice were still far from clearly defined, though there were probably few modern surgeons who would now treat a severe abdominal injury on the so-called expectant plan. At the same time, it was necessary to be very cautious in order to avoid running into the opposite extreme and doing needless operations. The cases in question were, he said, sufficiently common, and the subject was of special interest to those practising in remote districts. The symptoms of ruptured viscera as the result of severe crushing violence were usually clear enough, especially when of the bladder or kidneys. There remained injuries of the stomach, intestine, liver, spleen, pancreas, mesentery, and great nerves, in which the greatest difficulty often arose in diagnosis and treatment. He regarded the persistence of collapse as a grave sign of internal injury, especially if associated with vomiting and rigidity, with subsequent distension of the belly and increasing quickness of the pulse, while localised pain and tenderness must not be ignored. He thought that a small median opening into the abdomen, if quickly done, was very free from risk, and when the condition of affairs had thus been ascertained, the wound could be enlarged and the conditions dealt with. *Case 1.*—A boy, aged 11, was run over by a cab. On admission he was much collapsed, and complained of severe abdominal pain. Mr. Sheild opened the abdomen and found it distended with blood flowing from a large tear of the mesentery near its root. The rent was sewn up and the boy made a good recovery. *Case 2.*—A boy, aged 14, had been run over three hours previously. The right thigh was fractured but the pelvis seemed intact. The urine was clear. He had vomited, and the belly was rigid and very tender. After a few hours his condition improved and the abdomen was opened. It was full of blood, and a large tear was found in the mesentery, severing some large vessels, which were secured. The jejunum opposite the mesenteric injury was torn right across, and the ends were trimmed and joined by a double row of silk sutures. The boy rallied somewhat, but died eight hours later. Post-mortem a second rupture of intestine was found near the transverse duodenum. *Case 3.*—A boy, aged 16, was admitted, having been run over, with all the signs of very grave abdominal injury. He was intensely collapsed, but rallied under treatment. The relatives refused

the proposal to open the abdomen on the following day, but consented that evening, when the abdomen was found full of blood coming from a large rent on the convex surface of the liver. This was stuffed with a sponge wrung out of turpentine and the bleeding was arrested. It was obvious from the first that the case was hopeless, and he died eight hours after the operation. *Case 4.*—A woman, aged 61, was run over, and was admitted in a state of collapse, with the signs of grave abdominal injury. The urine drawn off by catheter was slightly tinged with blood, but the bladder did not appear to be injured. The author explored the abdomen, and found an ecchymosis on the posterior surface of the bladder and nothing else. The case, however, did not do well; the abdomen became distended, vomiting was urgent, and febrile symptoms supervened. On the third day she became violently maniacal and tore out some sutures. She died on the fourth day, and post-mortem a quantity of extravasated fæcal matter was found behind the cæcum with diffuse suppuration. The rent in the cæcum was small and covered with lymph. In conclusion, it was pointed out that the mortality in this class of cases must always be high by reason of the gravity of the lesions for which the operation is undertaken. Such operations must be looked upon as merely failures to save life, and not as fatal in themselves. This high mortality ought not to deter them from performing them, as occasionally they might enable life to be saved otherwise doomed to speedy and certain destruction.

In the discussion, Mr. G. R. Turner related cases of the kind on which he had operated. The first was in 1892, that of a boy aged 12, who had been injured by a fall. Twenty-four hours later he opened the abdomen and found a very extensive twist of the ileum, in fact, a traumatic volvulus, which he reduced, and the boy recovered. Since then he had opened the abdomen in four other cases of abdominal injury without external wound. One was rupture of the liver, which he plugged, but the patient was much collapsed and died. Another case was that of a man who sustained rupture of small intestine. He stitched up the lacerations, and, at the same time, did a radical cure for an existing hernia, and the man made a perfect recovery. In a third case the collapse was such as to prevent immediate operation. When he opened the abdomen he found bleeding from a small rent on the under surface of the liver which was in process of cure. There was, however, an enormous extravasation of blood in the retroperitoneal space, which he attributed to rupture of the kidney, but with which he did not deem it advisable to interfere. He rallied well from the operation and lived for eight days. Post-mortem nothing could be found to account for death except the retroperitoneal extravasation,

in the midst of which the kidney, crushed almost beyond recognition, was found. The following week another almost identical case presented itself, but the colon was also torn across. He stitched the ends together and removed the damaged kidney and the patient made a good recovery. He admitted that in these cases it was very difficult for the surgeon to know when to hold his hand, and he admitted that some of these cases recovered under the expectant treatment in spite of formidable injuries.

Mr. Battle discussed the conditions in which surgical intervention was advisable, but admitted that these cases were often the source of the greatest anxiety to surgeons. He had had to operate in three cases of ruptured intestine. In the first case the symptoms were very clear. In the second case peritonitis had already set in three or four days after the injury, but the general condition was good. The third patient, who was drunk, had been sent away from another hospital, no injury having been detected. He operated, but the man died a month later from sub-diaphragmatic abscess. He recalled the saying of French surgeons that if not operated within fifteen hours a fatal result was inevitable. He insisted on the variable nature of the element shock, which might be well marked in comparatively trivial cases, and be almost absent in very grave injuries. One never knew in abdominal cases how soon unfavourable symptoms might appear. He asked what was the condition in the author's cases in respect of dulness on palpation?

Mr. Sheild, in reply, protested against the idea that an operation was imperative in all cases of abdominal injury. It was only when the collapse did not pass off, the belly becoming rigid and distended, that an exploratory operation was justifiable. He urged that cases of slight abdominal injury should be put on the same footing as slight injuries of the head. He had had great difficulty in satisfying himself of the existence of dulness on percussion, and the disappearance of the liver dulness was a sign that should be regarded with great caution, for it was often simulated very closely by distended intestine.—*The British Medical Journal*, *October* 29, 1898.

86.—TOTAL REMOVAL OF STOMACH FOR CARCINOMA OF PYLORUS.—RECOVERY.

By G. Childs Macdonald, M.D. (Brux., hon.), F.R.C.S. Edin., M.R.C.S. Eng., Lecturer on Surgery, College of Physicians and Surgeons, San Francisco, and Visiting Surgeon, St. Mary's Hospital.

[Dr. Schlatter's now historic case was referred to in the last volume of the *Retrospect*. In the *Boston Medical and Surgical*

Journal of May 5, Dr. Brigham reported another successful case. The patient, aged 66, was alive and well seven weeks after the operation.]

J. Patritti, Italian; aged 38 years; occupation, dairyman; admitted to St. Mary's Hospital on June 15, 1898, suffering from a tumour of the pyloric end of the stomach. The usual symptoms associated with that condition were present; as the patient was unable to speak English but imperfectly, no definite history was obtainable, but so far as we could gather he had been ill, probably unable to work, for two and one-half months prior to entering the institution. He stated he never had any previous illness; moreover his immediate relatives were free from cancers or tumours. He complained of pain in the epigastric region, paroxysmal in character, vomiting, and weakness. The physical examination revealed marked general emaciation, a distinct movable tumour in the right hypochondrium; the stomach was dilated, and, on stimulation of the epigastrium by rubbing, could be made to contract violently, attempting to pass its contents on to the duodenum. By the clinical picture presented, I concluded the growth must have extended, at least, over a period of six months. His weight, unfortunately, was not taken. Feeling the hopeless condition of the patient, I decided to remove the whole of the stomach. To this he consented. He was accordingly brought into the operating room at 9 a.m., June 15, 1898. Ether was the anæsthetic used, which he took badly, and half the operation was done without any, stimulants having to be administered hypodermically on several occasions. The incision was commenced at the tip of the ensiform cartilage, continued down over the linea alba to half an inch below umbilicus on the right. On opening the abdomen the stomach and liver came into view, omentum devoid of fat; there were no adhesions. The first part of the duodenum and pylorus were freely movable. The great omentum was tied in portions about half an inch from the stomach and cut away to a point midway between the first part of the duodenum and splenic end of the stomach. The gastro hepatic was treated in a similar manner to half-way along the lesser curvature; fine catgut was the material used. The duodenum was now clamped in two places and the gut divided between; the forceps on the distal end were covered with rubber; the cut ends were immediately packed around with gauze to prevent infecting the peritoneum; by this means the pyloric end of the stomach could be drawn out of the abdominal cavity. The remaining portions of the gastro-hepatic omentum and of the gastro omentum were treated in a similar manner. The œsophagus, which was elongated and drawn down, was clamped and divided as had been the duodenum; the stomach

was then removed. It was found the duodenum and œsophagus could be brought together with a moderate amount of tension. A large-sized Murphy button was used to complete the anastamosis, but it was found necessary to use several reinforcing sutures for the anterior two-fifths of the duodeno-œsophageal juncture; the material used for this, as likewise the running thread, was silk. The abdomen was closed in the usual way. From the time the man commenced to take the anæsthetic till his removal from the table, a period of ninety minutes had elapsed; toward the end he showed a considerable amount of collapse; this continued for four hours, despite hot water-bottles, flannels, and stimulation by hypodermics of whisky and strychnine. Towards the afternoon he rallied; by 7 p.m. his condition became again alarming, the pulse ran up to 120, weak, compressible, and irregular; in fact, he presented all the symptoms of so-called cardiac failure. Enemas of hot coffee, together with hypodermics of whisky and strychnine, were administered without any appreciable effect; hot water was also tried by mouth. Sitting by the patient's bed, feeling the failing pulse, it struck me the condition presented more the phenomena resulting from inhibition of the pneumogastric, and the uncontrolled action of the sympathetic; I therefore administered a hypodermic of 1-100 digitalin. The effect was immediate, the pulse dropping to 110 and steadying. From now on he continued to improve, the digitalin being continued at intervals as required. Urine and fæces passed voluntarily at 10.30 p.m. Nutritive enemata were given through the night. The following day he was given half an ounce of peptonised milk and whisky by mouth every hour. Larger amounts by rectum at similar intervals. Respiration 30, temperature 101, pulse 102. June 17, pulse 118, respiration 23, temperature 101·2. Nourishment as before. June 18, pulse 106, respiration 18, temperature 100·8. Amount of nourishment doubled, per mouth, but given every two hours, white of egg and beef peptonoids added, enemata as before. June 19, pulse 82, respiration 18, temperature 99; rectal feeding stopped. Chicken broth added; bowels moved. June 20, pulse 80, respiration 18, temperature 98·4; egg-nogg added. June 21, pulse 82, respiration 18, temperature, 98·3; given chicken broth thickened with rice flour; corn-starch and wine jelly; bowels moved. June 23, wound dressed first time to-day; had healed by primary union; about half of the sutures removed; patient hungry, wants beef-steak. July 3, button passed. Given California oysters and minced chicken. Bowels act once daily, evacuations solid. July 10, sat up. From this on patient improved rapidly, gaining strength and flesh. On July 15 he informed a fellow-countryman in the ward he intended going down town to see a friend and do a

little shopping; he slipped out of the ward, and was discovered by me at 4 p.m. carrying a grip-sack which contained his purchases. He was indignant at my putting him on a car and taking him back to St. Mary's, saying he "felt good" and was "all right." The grip-sack weighed 12 pounds, and the man turned the scale at 105 pounds. He then made us understand that his usual weight was 135 pounds. July 21, patient has not started off on any more excursions, but contents himself with playing poker and walking round the hospital grounds. His weight to-day is 107 pounds. July 28, patient left the hospital and returned home, and is feeling well and in every way satisfactory.—*Journal of the American Medical Association, September* 3, 1898.

87.—THE SURGERY OF THE STOMACH.

By W. W. Keen, M.D., LL.D.,
of Philadelphia.

[The Cartwright lectures, by Prof. Keen, were published in the *New York Medical Journal* and *Philadelphia Medical Journal* of May 7 and 21, and June 4 and 11, 1898. The following is taken from Mr. Platt's abstract in the *Medical Chronicle* of July, 1898.]

Gastrolysis. — Gastrolysis, or loosening the stomach from adhesions, is an operation which has a somewhat restricted but still an important field in gastric surgery. The adhesions usually arise from ulcer; more rarely they are due to gall-stones, peritonitis, &c.

Gastrotomy.—The indications for this operation are three in number—(1) For the removal of foreign bodies from the stomach; (2) in cases of stricture of the œsophagus; (3) for exploration of the stomach.

Gastro-enterostomy.—The indications for gastro-enterostomy are—(1) Malignant stricture of the pylorus; (2) non-malignant stricture; (3) ulcer of the stomach. The object of the operation is to empty the stomach as quickly as possible, and, in the case of ulcer, to put it at rest. Keen thinks that in the future a fourth indication may be accepted, namely, obstinate digestive troubles which have not yielded to purely medical means. In non-malignant cases the results are extremely favourable. Even in malignant disease, life may be prolonged for as much as two years, although, in the majority of cases, death is to be expected within a few weeks or months. The operation, however, gives great relief, and the question in such cases is not how long the patient lives, but how he lives.

Pylorectomy.—Practically the only lesion for which pylorectomy is performed is cancer of the pylorus. Amongst the chief drawbacks of the operation is the difficulty in making a sufficiently early diagnosis in cases of cancer of the pylorus. Whether a pylorectomy shall be done or not depends on three factors—(*a*) The extent of the tumour; (*b*) the extent of the adhesions; and (*c*) the extent of involvement of the glands. In all cases of extensive glandular enlargement or extensive adhesions it is wiser to select the operation of gastro-enterostomy. Pylorectomy may be performed either by Billroth's method, in which, after removal of the pylorus, the end of the duodenum is united to the cut end of the stomach, or by Kocher's method, in which the ends of the stomach and duodenum are closed, and afterwards a posterior gastro-enterostomy is done.

Pyloroplasty.—The indication is non-malignant stricture of the pylorus, usually resulting from ulcer. A longitudinal incision is made in the axis of the pylorus, the edges are drawn apart, and are united by sutures in such a manner that the incision lies transversely to the lumen of the canal. In this way the pyloric opening is considerably enlarged. The advantages of this operation over gastro-enterostomy are the absence of any possibility of reflux of bile or pancreatic fluid into the stomach, the lower mortality, and ultimately, in many cases, the restoration of the normal pyloric action. It does not, however, give as free exit to the contents of the stomach. Haberkant, in 1896, collected 51 cases, with 11 deaths, a mortality of 21·6 per cent. On the whole the operation appears to be losing favour with most surgeons.

In view of the large mortality and the fact that the pylorus sometimes recontracts, Loreta's operation has fallen into disfavour as compared with the less dangerous operation of pyloroplasty.

Gastrorraphy or Gastroplication.—Keen thinks it would be better to limit the former term to cases in which a limited portion of the stomach-wall is sutured, with or without removal of a portion of the wall, and to use the term gastroplication for those cases in which a large portion of the stomach-wall is infolded. Gastroplication has been performed in certain cases of great dilatation of the stomach as a result of atony. Fifteen cases have been reported, with only one death. With regard to functional recovery, the almost unanimous conclusion of those who have done the operation is in its favour.

Gastropexy.—Gastropexy, or suture of the stomach to the anterior abdominal wall, is an operation which has been undertaken for the condition of gastroptosis, or sagging of the stomach—the so-called Glénard's disease. A few successful cases have been reported.

Gastroplasty and Gastro-anastomosis or Gastro-gastrostomy for Hour-glass Stomach.—The symptoms are those of obstruction—pain, vomiting, and distension, especially of the cardiac pouch. The diagnosis presents great difficulties : in only a few of the cases operated upon has it been made before operation. Eleven cases have been subjected to operation, but in two nothing radical was done for the relief of the condition. Of the remaining nine cases, one died from peritonitis, due to the giving way of a suture.

Hernia of the Stomach.—The stomach has in one case been found in a femoral hernia, and in six cases in inguinal hernia. Only once was the exact diagnosis made before operation : in this case the portion of the stomach in the hernia became distended every time the patient ate or drank.

Gastrectomy.—(1) Partial gastrectomy :—With the exception of removal of portions of the stomach for tumours and ulcers, the only case of partial gastrectomy on record is that of Kolaczec, who successfully removed a diverticulum of the stomach wall. (2) Total gastrectomy :—The recent case of Schlatter was the first case on record in which it was proved that the whole of the stomach had been removed. Since this case two others have been reported in America; one died thirty-six hours after the operation, the other was well after an interval of six weeks. In addition to these there are several cases on record in which practically the whole stomach has been removed. Altogether there are twelve cases, six of which recovered, five died, and in one the result is unknown.

Gastric Ulcer.—The surgical treatment of gastric ulcer is of very recent origin. In operating upon these cases it must not be forgotten that there is not infrequently more than one gastric ulcer.

(1) The treatment of non-perforating ulcer.—In the great majority of cases this is purely medical. To the small but important number of cases which do not yield to medical means, three surgical methods of treatment are open. The first two of these are pyloroplasty and gastro-enterostomy. The object of both is to put the ulcer as far as possible at rest. The third method is excision of the ulcer. A number of cases in which excision has been carried out are mentioned, and the author refers at length to a case in which he excised an ulcer from a woman, aged 61. At the time he thought that it was a localised carcinoma, but subsequent examination proved that it was a simple ulcer. The operation was performed in 1892, and six years later the patient was in excellent health. Almost every case on record of partial gastrectomy for non-perforating ulcer has been followed by success. In view of this fact, and considering the dangers of

ulcer—malnutrition from constant vomiting and pain, hemorrhage, and occasional malignant degeneration—the author thinks that in cases of gastric ulcer which do not recover in a reasonable time under medical treatment, the question of excision of the ulcer should be carefully considered. "The danger to life from gastric ulcer," says Mikulicz, "is at least not less, but probably far greater, than the danger of a complete modern operation." (2) Operation for hemorrhage from ulcer of the stomach.—Hartmann, who collected twelve cases of operation for this condition, eight of which died, says that, considering that the hemorrhage can usually be stopped by other means, it is well to abstain from operative interference in cases of hæmatemesis with acute anæmia. (3) The treatment of perforated gastric ulcer.—The author agrees with Mikulicz, Barker, and Thompson in urging that operation should not be delayed in these cases in the hope that shock will pass off: the shock will only pass into a fatal peritonitis. Moreover, the results of immediate operation are very much more favourable than those in which the operation is delayed. The abdomen is opened by an incision in the median line or on the left side. The stomach having been exposed, a methodical search for the ulcer is begun. In some cases the injection of air through a stomach-tube may assist in finding the perforation. The methods of dealing with the perforation are various. In some cases its edges have been pared and sutured; in other cases the edges have been merely inverted and the stomach-wall sutured by one or two rows of Lembert's sutures. Sometimes it is impossible to carry out the above by reason of the thickness of the walls of the stomach, of surrounding adhesions, or of the size of the opening. Three courses are then open. The edges of the opening may be brought into contact without inversion, as in suturing a cutaneous wound, or the opening may be closed by an omental graft, or the intestines may be walled off by iodoform gauze and a tube introduced down to the open ulcer. In all cases the operation should be completed by careful cleansing of the peritoneum.

The author gives a table of the 78 cases of operation for perforated gastric ulcer which were collected by his assistant, Dr. Tinker, and compares these cases with the 78 collected by Weir and Foote in 1896. The following are the chief points which are mentioned:—(1) Age and sex.—Of Keen and Tinker's 78 cases, 9 were men and 61 women; in 8 cases the sex was not recorded. All the men were over 25 years of age. Of the women, 41 were under 25 and only 16 over that age. The age was not stated in four cases. (2) The site of perforation was in the following situations in decreasing order of frequency: on the anterior wall; near the cardia; near the lesser curvature;

near the pylorus, and on the posterior wall. (3) Ulcers not found.—The number of cases in which the ulcer was not found at the time of operation has been very much less in recent cases than in those reported a few years ago. This has been partly due to the fact that more recent operators have had less hesitation in breaking down adhesions. (4) The mortality has been progressively reduced. Of Weir and Foote's cases, 55 died and 23 recovered, giving a mortality of 70·51 per cent. Of the cases collected by Keen and Tinker, 28 died and 50 recovered, a mortality of 35·89 per cent. (5) The mortality in relation to time of operation.—An analysis of the 156 cases shows that if we wish to have any reasonable prospect of recovery the case must be operated on within the first twelve hours, and practically the earlier the better.

88.—PERFORATING ULCERS OF THE DUODENUM.

The occurrence of duodenal ulceration from certain causes has been long recognised, and the fact that we may have in the duodenum ulceration of the same kind as the so-called peptic ulcers in the stomach is well known. The behaviour of these ulcerations is a matter of great interest and importance in abdominal surgery. A Russian surgeon, Dr. Wanach, in a communication to the *Archiv für klinische Chirurgie*, vol. lvi., No. 2, gives a review of the cases reported by various surgeons, and also an interesting account of a successful operation by himself. We are struck by the fact that in no case in which an operation was done was the diagnosis made as to the site of the perforation for the symptoms of which the operation was undertaken. The diagnosis of peritonitis from perforation is of course simple enough, but to locate the perforation before operation is another matter. In many of the recorded cases the diagnosis was made of perforation of the vermiform appendix, and the error is quite comprehensible. It seems to be a pretty uniform symptom to have the pain, at the time when the perforation occurs, referred to the right side and usually high up, though the localisation may be in the umbilical region, and thus, if there is much distension, leave us in grave doubt. If the pain is on the right side, we shall almost certainly discover tenderness there also, and the region is near enough to that of the appendix to justify us in supposing that that structure is responsible for the symptoms, because we know what a large proportion of cases of perforative peritonitis do have their origin in it. The patient in the early stage of an acute peritonitis is usually in too anxious a condition to help us in this matter of

localising the pain. There is one sign of differential diagnosis between appendicitis and perforation from some other cause which we do not commonly see mentioned, and that is that pressure over the inflamed appendix will elicit tenderness in that region and pain referred to the epigastrium. This is not always noted, but in some cases it might be of service in enabling us to decide upon the diagnosis. This sign would not be present in gastric or duodenal perforation. We might have the epigastric pain, but not the tenderness on pressure in the iliac fossa. Unless we see the cases early enough to have our attention drawn definitely to the right side of the abdomen, we must proceed in our operative work upon general principles, if we are to operate with any prospect of success. Perhaps the most important aid that we can get will come from a very careful clinical history both of the onset and course of the acute trouble and of any disorder of the stomach or intestines in the previous history of the patient. We may get a history pointing toward gastric ulcer, and if an operation is done upon any of these cases we should, in the natural order of things, look for a perforation of the stomach before examining the deeper parts to find a suspected duodenal perforation. The surgeon ought to get valuable aid from the physician in this class of cases, for it is upon the latter that we must depend for our accurate histories and intelligent observation during any previous illness that the patient may have had.

The cases of ulcer of the duodenum so far seen are pretty uniform in their characteristics, and the condition described by those who have seen such cases operated upon for perforation has been that of an indurated thickened area, with a perforation of variable size, but usually round, in the centre of the area, and the site of the perforation has been very commonly at or near the apex of the curvature of the second portion of the duodenum, at a point at which the gastric contents have not lost their acid digestive power by becoming mixed with the bile and pancreatic secretion. The question of what to do with the perforation, when we have found it, is not so simple as it might seem. If we merely invert the edges by the usual method of intestinal suture, we run the risk of suturing through soft necrotic tissue with the consequent danger of infection and giving way of the sutures; and if we attempt to excise the whole ulcer we are apt to encounter great difficulty in placing our sutures and getting apposition, on account of the depth at which we are working. Of course, if the ulcer has perforated the intestinal wall at a part not covered by peritoneum, a retroperitoneal abscess is promptly developed, and the directions in which such an affair can travel are limited only by the patient's ability to stand the inroads upon his vitality and the involvement of other organs.

In one of the reported cases in which it was not possible to reach the perforation so as to suture it, the operator simply sewed the neighbouring omentum, stomach, and intestine together over the location of the perforation, and the patient recovered. Most surgeons, however, would adopt such a measure only as one fraught with great risk, and would probably prefer to trust to a drainage tube and packing for the first part of the treatment. It has been the universal experience that it is better to treat the abdominal wound in these cases by packing and drainage, chiefly on account of the infected condition of the whole abdominal cavity by the time the operation is done, and the greater security which such a method gives when we are dealing with tissue of such dubious vitality as that in the edge of an intestinal perforation. The question of irrigation is to be decided upon the same general principles which govern all abdominal work. The whole subject of the surgical treatment of such ulceration is only in its infancy, and every carefully recorded observation helps to add to our knowledge of a necessarily obscure condition. We must hope that by careful observation of such cases by the surgeon and by careful investigation by the pathologist, we may in the future be able to recognise the condition present with sufficient promptness to render important aid in an increasing proportion of cases at best very grave.—*From a leading article in the Medical Record, July* 30, 1898.

89.—THE SURGICAL TREATMENT OF INTUSSUSCEPTION.

By Dr. Henry Howitt.

Dr. Howitt stated that in the infant we had only the acute forms with which to deal in practice; nay, possibly only the ileo-colic, which all authorities agreed to be the most acute and rapid variety of invagination. It was, he stated, the ileo-cæcal form *plus* the valve distended and the lumen occluded by the swollen and œdematous invaginated portion of the ileum which, owing to the tight constriction at the neck by the valve, in a manner resembled a well-hammered boiler rivet, that no evenly distributed pressure from within could force out. The author believed that many instances of the trouble occurred in infants, leading invariably to death, without the true nature of the malady being recognised by the attendant; and that when the facts having reference to this variety of intussusception became generally known fewer deaths would be recorded in certain bowel affections and more lives saved by surgical means. He had seen seven cases, six of them almost within the

past five years, or since his attention was drawn to the subject. Six were in male children; all came from a district the population of which was under 12,000. He had operated successfully on four, all of whom were under six months of age. A fellow-practitioner lost one, owing to an accident during operation. In one case the friends refused operation and death resulted, and one child died shortly after the onset before anything could be done. The symptoms of ileo-colic intussusception were fully dwelt upon. In regard to its diagnosis, the speaker emphasised the importance of the history of the onset, and stated that without it the attendant might be likened to a ship in a storm without helm or compass. In fact, the nature of the onset might suffice for a diagnosis. The detection of a tumour in the course of the colon left no room for doubt. The condition in this form of intussusception was such as to preclude the hope of recovery by any method short of operation. No time should be lost in trying either bowel inflation or injection of fluids. They could do no good. His method of operating was as follows:—He maintained the temperature of the child by suitable applications to the extremities and body during operation. Rigid aseptic preparations and precautions should be carried out. A median, three-inch incision, avoiding the high-placed bladder, was made; the small intestines were eventrated as rapidly as possible and protected with gauze, which was irrigated with water of suitable temperature. The evisceration allowed the obstructed portion of intestine to be brought into view. When, as was generally the case, the invagination had reached the transverse colon, the surgeon could not bring it out of the wound till the part of the large bowel implicated was dis-invaginated. This was accomplished by making pressure on the apex of the intussusceptum while the intussuscipiens was pulled in the opposite direction. It was done by grasping the colon close to the apex with the hand and following it up the bowel step by step till the colon and cæcum were free. The mass was now lifted out of the incision. Then came the most difficult point—the reduction of the invaginated portion of the ileum. The part was grasped in the hand and firmly pressed for a few minutes; then pressure was made with the thumbs on the apex, while the fingers surrounded and supported the outer orifice of the ileo-cæcal valve. The method resembled that used in paraphimosis, only the large bowel covered the part from view. Before the intestines were returned to the abdominal cavity the contents which had accumulated in the ileum above were forced through the affected part into the colon; this would prove that the difficulty had been effectually overcome and ensured an early movement of the bowel. Drainage was not necessary. The omentum was spread over the intestines to

prevent adhesion of the bowel to the line of incision. The dressing was covered with oiled silk, the edges of which were sealed with collodion to prevent urine reaching the cut.

Dr. Reed said his experience was restricted to a single case of intussusception in infants. The child was operated upon *in extremis*, and died within the first five hours following operation. With early interference the outcome might have been different.

Dr. Price said the cases reported were a beautiful demonstration of what could be accomplished by good judgment, great diagnostic skill, and early surgical interference.—*Medical Record*, *October* 1, 1898.

90.—APPENDICITIS.

By Maurice B. Richardson, M.D.; and G. W. W. Brewster, M.D.

[The excerpt is taken from a paper based on 750 cases, including 150 operated upon in the interval.]

In the 150 interval cases there has been a great variety of pathological conditions, and a wide range in the symptoms by which the operation was justified. The symptoms varied, too, with the lesion upon which they were dependent. The difficulties of operation depended largely upon the type of inflammation. In all cases in which the disease was confined to the appendix, and in all cases in which the symptoms were dependent upon a faulty position and shape, the operation was comparatively easy; in cases in which there had been a localised peritonitis, or in which the disease had been of many years' standing, it was extremely difficult. In some cases of long standing the appendix was found so buried in a mass of fibrous adhesions that it was impossible to tell where the bowel ended and the appendix began. Once or twice the inner layers were separated from the outer, a mucous tube being extracted from a fibrous cylinder, not unlike the unsheathing of a sword. In some cases the operation was difficult from the remote situation and firm adhesions of the appendix; in others the appendix was withdrawn from the wound with the greatest ease. In no case did we fail to find the appendix and remove it. In all chronic cases except the earliest, McBurney's incision was used whenever possible. A non-adherent, deliverable appendix requires a very short cut in a thin-walled abdomen; an adherent appendix a longer one. We have been seldom obliged to abandon the McBurney cut. This method seems to us, on the whole, the best. In several instances the appendix or its

surroundings have had a suspicious look; there have been yellowish masses, or a grumous fluid, or distinct pus. In these cases we have invariably drained for forty-eight hours. The rapidity and thoroughness of the convalescence have not been interfered with. Several of the few cases which have been fatal in the hands of others have been sewed up without drainage. There need be but a single wick going down to the suspicious area. This is removed in forty-eight hours and the wound closed with a stitch left in provisionally at the time of operation. The appendix and its mesentery are tied off with silk, great care being taken to provide against hemorrhage. The actual cautery is used to separate the appendix. Its stump is burned close to the ligature, and the whole depressed into the cæcal wall, and buried there beneath four or five fine silk sutures. The wound is closed by one or more silkworm-gut sutures. Convalescence requires two weeks, the patient going home on the fourteenth day. In the list of chronic cases many unusual and interesting ones are included, but our limited time does not permit even a passing allusion to them. With but one or two exceptions the symptoms have disappeared after operation. It is interesting to note that there have been, long after appendectomy, two attacks of what would be confidently diagnosticated as appendicitis. In one case there was only pain; in the other pain, tumour, and fever; the latter was an acute case. The results, with these few exceptions, have been so gratifying that but one opinion can be entertained as to the value of the operation. From a feeling of strong doubt as to the advisability of the operation in the interval, we have been led to one of confident enthusiasm: from one of extreme conservatism to one of marked radicalism.

With reference to the treatment of acute appendicitis, on the other hand, we feel more inclined to conservatism than formerly, provided only that we can see the case in the first hours of the attack with the opportunity of careful observation. When we see a case in which we are in doubt about interference, we are often influenced by the patient's distance from surgical aid. One may safely watch for the most favourable moment in a case in a hospital when he would not delay if the case were in a remote town. The safest plan, on the whole, is to consider each case as it stands, operating in some, delaying in others, the question of operation and delay to be decided only by those experienced in the disease. The safety and efficacy of the interval operation make it desirable whenever possible to bring the patient through his acute attack without operation. Severe cases, however, should not be allowed to run in the false hope that an operation can be avoided.—*Boston Medical and Surgical Journal, July* 21, 1898.

91.—PERFORATION OF A TYPHOID ULCER: OPERATION: RECOVERY.

By H. Handford, M.D., M.R.C.P. Lond., Physician to the General Hospital, Nottingham; and

A. R. Anderson, F.R.C.S., Surgeon to the General Hospital, Nottingham.

[Perforation occurred during convalescence.]

Perforation of the intestine in typhoid fever is unfortunately not uncommon, and although there is little doubt that recovery does occasionally, though very rarely, follow, the result in the vast majority of cases is fatal unless surgical aid be sought. No very great measure of success can be expected from operation undertaken under such desperate circumstances. Nevertheless, Finney, of Baltimore, has collected forty-seven undoubted cases of operation with thirteen recoveries, a percentage of 27·65. The diagnosis of perforation in the earliest stage is by no means always easy. This is shown by several published cases which have been operated upon and no perforation found, and by the fact that out of the forty-seven cases collected by Finney, in eight a wrong diagnosis had been made. Typhoid perforation was found, but appendicitis or some form of intestinal obstruction had been diagnosed. By far the most important difficulty in recommending operation is the fact that usually when perforation occurs the patient is prostrated by an acute and exhausting disease, the course of which is not yet terminated. The present case was an unusually favourable one, because the attack had never been very severe, and the patient was not exhausted. The perforation occurred during convalescence after nearly a week's normal temperature. My absence in the country caused an unfortunate delay, but the case shows that even after twenty-two hours or more operation may be undertaken with success. The severe nephritis during convalescence from the operation was very unfortunate, and has much delayed complete recovery. It was probably due to a septic infarction of the kidney, which suppurated and discharged into the pelvis of that organ.

History.—G.S., aged 27, was admitted on February 15, 1898. He had not got well for three weeks, and had been in bed six days complaining of pain in the head and limbs, diarrhœa, sickness, sore throat, cough, deafness, and nocturnal delirium. On admission the temperature was 102° F.; there were numerous spots, and the spleen could be felt. There was no albumen in the urine, and his case ran a moderate and uneventful course. There was slight diarrhœa for three days; the highest temperature was 103° F., and the temperature reached normal on

March 2, being the sixteenth after admission, the twenty-first in bed, and probably the twenty-fifth of the disease. He was kept exclusively upon milk and beef-tea until March 2, when a beaten-up egg was allowed. On March 4 the temperature rose to 101·2 F., and was thirty-six hours in subsiding. The pulse had fallen to between 80 and 88 per minute, and he appeared quite convalescent, but no solid food was given for fear of a relapse. On the evening of March 10, the twenty-ninth day in bed, and probably the thirty-third of the disease, he complained of a sudden pain in the abdomen, but the pulse did not rise above 90, and the temperature remained subnormal. The bowels were moved, and a trace of blood appeared in the motion. There was no sign of collapse. Opium was given by the mouth, and next morning as the pain continued, a hypodermic injection of morphine. I was out of town, and was unable to see him until twenty-one hours after the sudden onset of the abdominal pain. By that time his pulse had risen to 120, his temperature to 102° F., and it was evident that he had perforation and commencing peritonitis. My surgical colleague, Mr. Anderson, was fortunately within reach, and gives the following account of the operation, which was commenced twenty-two and a half hours after the occurrence of the perforation.

Operation.—An incision four inches long was made in the mid-line below the umbilicus. On opening the peritoneum some gas and fæculent matter escaped. The whole of the small intestine was deeply congested and covered with patches of lymph. Examination of the coils within view did not reveal the leakage, so the cæcum was found, the ileum traced from its termination, and the perforation found within three feet of it, the opening being about the size of a bean. Its edges were thinned, but not excessively. The loop of bowel was pulled out of the abdomen, and the hole closed by Lembert's sutures of fine silk. The edges of the opening were not pared, and the intestinal walls on either side of it, although thinned by ulceration, were in sufficiently good condition to hold the sutures well. The small intestine was then pulled out loop by loop, wiped with sponges wet with 1 in 2,000 biniodide solution, and replaced, until the whole had in this way been cleansed. The pelvis and loins were treated in the same way. Douching was not employed. The presence of septic peritonitis was well marked over the whole area occupied by the small intestine, and also in the pelvis. The abdominal wound was closed completely; no drain was used.

After-History.—The urine had been tested twice a week up to the date of the perforation, and always found quite free from albumen. Two days after the operation there was a cloud of

albumen, which soon disappeared. Again, on March 27 and April 3 the urine is recorded as quite free from albumen. On April 4 the temperature, which had been normal for a fortnight, began to rise to 100° and 101°; and on April 6 the urine was smoky, and contained a large amount of blood and albumen. The albumen rapidly diminished, though a few blood and epithelial casts were found. The temperature returned to normal, and he appeared to be going on well until April 23, when the temperature rapidly rose to 105·2°, and the quantity of blood and albumen again increased. By May 3 the temperature was again normal, casts were very rarely found, but about one ounce of pus was discharged in the urine daily. At this date (June 8) the albumen is very slight in amount, and is fully accounted for by about 1 drachm of pus which is still passed. The quantity of urine is 60 to 80 ounces daily, and the specific gravity 1,015. The patient is on meat diet, sitting up, and gaining flesh. Had it not been for the unfortunate renal complication he would have been out long ago. The wound has been soundly healed for several weeks.—*The British Medical Journal, July* 23, 1898.

92.—ENTERECTOMY.

By the late J. Greig Smith, M.A., F.R.S. Edin., Professor of Surgery, University College, Bristol.

[The following is an excerpt taken from an address given before the Leamington Medical Society :]

Ring cancer is usually discovered during operation for intestinal obstruction. Now, enterectomy for cancerous growth as part of the operation for obstruction is a very grave—according to some authorities an unjustifiable—operation. As usually performed, at one sitting, I admit that the operation is almost unjustifiable. Carried out in the way I recommend, in two stages, I have had five enterectomies all successful, and of two performed in other ways, one was successful and one fatal. In all these it is to be noted that the call to operate was from the obstruction, and not from the new growth. Tumour-cancer, which is rarely associated with obstruction, and is usually diagnosed by palpation through the parietes, may be removed by any of the numerous methods of enterectomy at the will of the surgeon, when and how he chooses. Now, the death-rate after operative removal of intestinal cancer in the absence of obstruction is over 25 per cent. of published cases ; over all cases it is doubtless well over 40 per cent. This is a terrible mortality,

higher, I hope and believe, than it need be. If with the methods in use this is the best that the best surgeons can do, then I am convinced that there is something wrong in the methods. I am going to venture to suggest an abandonment of the old methods, and to recommend an operation which I will now describe. I first performed it for ring cancer during obstruction six years ago, and I have performed it for the same disease during obstruction in four other cases. It is, I believe, certainly the best method of dealing with cancerous bowel during obstruction. For tumour-cancer I had meanwhile been doing my share of operations by the ordinary methods, with bone bobbins, Murphy buttons, and suturing, and had had the ordinary share of success, no better and no worse than my neighbours. But my success has been less for operation without obstruction than for operation with obstruction; *a fortiori*, therefore, I have argued that the operation I adopted of necessity was better than the one I followed from choice. I have now come to the decision to adopt this method for all cases of enterectomy until something better is discovered. I stumbled on the method when operating on a lady patient of Mr. Eadon, of Hambrook, who was desperately ill with intestinal obstruction. The obstruction was comparatively sudden in onset; vomiting had existed for a week, and an operation was performed in ignorance of the exact cause. A cancerous stricture was found in the sigmoid flexure. This was brought outside; a wooden penholder was passed through its mesentery, after the method of Maydl, and permitted to rest on the parietes, and the intestine above was opened and drained. A week later the growth was cut away, and an artificial anus was left over the pubes. This I closed by means of Abbe's catgut rings, which I soon had to remove by another operation on account of a new intestinal obstruction which they caused. Then I had other cases, one after another doing well, and each in method showing some improvement on the one before. The trouble was the artificial anus which was left, and how to close it without risk to the patient. Finally, I think I have got a method of doing this, and now I venture to put before you the whole operation. It is, I admit, not so simple as other methods, but what of that if it gives more safety to the patient? This was the surprising and delightful element of the operation. After the acute trouble from the obstruction was over—a period lasting rarely more than twenty-four hours—there never was a moment's anxiety as to recovery. It was not so much the recovery as the manner of it which impressed one.

The following are the steps of the operation. It is performed in two stages, the first step resulting in fixation of the diseased bowel outside the abdomen in the parietal incision, the second

in resection of the growth and the necessary amount of bowel, and in the suturing of the divided ends and returning them inside the parietal incision, but not into the general abdominal cavity. The delivery of the growth is usually quite easy ; but sometimes the mesentery is much shortened, and then, to get a sufficiency of bowel outside, it may be necessary to divide the mesentery at its deep attachment. If what I have said as to invasion of mesentery by growth be true, then we ought to remove more of the mesentery than we usually do. Not a wedge-shaped piece but a fan-shaped piece should be removed, the handle of the fan being at the centre of intestinal disease. The mesentery should be divided between ligatures suitably placed by transfixion, and all suspicious portions should be removed outside. Then through the mesentery and under the bowel should be placed one or more skewers or supporting rods. The skewer or skewers should pass through healthy mesentery, because everything down to the skewer is to be removed. The incision may be made anywhere, over the disease always if possible. Sutures of any sort, either in the parietes themselves or between parietes and bowel, are quite unnecessary unless the incision has been made too long, and the gut should be placed on the raw parietal incision. If there is no obstruction the bowel, covered with silk protective or gutta-percha tissue, is left in the wound for forty-eight hours while adhesions are formed. These are always firm enough at the end of this time. If there is intestinal obstruction, with distension, drainage of the bowel above the obstruction must be carried out. This is done simply by making an incision in the bowel and inserting a rubber tube on the stretch into the opening, and fixing the bowel to the tube by a purse-string suture or any similar simple device. At the end of a week, more or less, according to circumstances, the bowel is resected down to the skewers and sutured on the spot by Lembert's method, or perhaps better by Halsted's. This is done outside the abdomen, and, as it causes no pain, an anæsthetic is not necessary. But the bowel has to be returned inside the parietal incision ; this requires an anæsthetic, for it means separation of the bowel from the parietes, and also peeling of the parietal peritoneum from the muscle. This is a delicate process, and one which I have not found it easy to describe, while I cannot say that it is easy to do. The secret is not to disturb the adhesion of the parietal peritoneum to the bowel while it is being separated from the muscle sufficiently to permit the knuckle of gut to be pushed inside. The sutured gut is freed from everything save its parietal peritoneum, and is pushed inside with the peritoneum adherent. Then over it the parietes are pulled together, and sutured in the ordinary way.

This is the ideal method; but, enterorrhaphy, as a matter of fact, or the closure of the intestinal opening, may well be delayed for a month or longer. By the insertion of a piece of rubber tubing—the excellent suggestion of Mitchell Banks—the spur is removed and the gut is straightened, so that at the end of this time quite a small portion of the circumference requires suture. An anæsthetic is necessary for the operation, because the incision above and below the anus must be extended, and the areolar tissue uniting parietal peritoneum to muscle must be freely opened up. The operation is, in fact, the one for closure of an artificial anus which I have elsewhere described and figured, and which is done shortly as follows:—First, an incision is made through the parietes for a couple of inches above the anus. This goes down to the subperitoneal areolar tissue. The forefinger is inserted into this, and is made to separate it freely from the parietes all round the adherent gut. The adhesions to the gut must be divided; they are usually very firm. Then the two ends of the gut with its adherent peritoneum are delivered through the wound and sutured carefully. Finally, it is returned and the parietes are sutured over it.—*The Lancet, July* 23, 1898.

93.—NON-MALIGNANT STRICTURE OF THE RECTUM.

By A. E. Halstead, M.D., of Chicago,
Professor of Rectal Surgery in the Chicago Polyclinic; Instructor in the Principles of Surgery and Clinical Surgery in the North-Western University Medical School of Chicago.

A non-malignant stricture of the rectum may be defined as a pathologic condition in which there is a progressive narrowing of the rectal canal following a loss of tissue, the result of ulceration or of trauma, and the subsequent contraction of the inflammatory tissue. As causes of the local conditions producing rectal stenosis, we have syphilis, trauma, simple ulceration, gonorrheal and chancroidal ulcers, dysentery, phlegmonous proctitis, and tuberculosis as active factors. Syphilis is the most frequent cause, and one-third of all cases may be attributed to it. Curling in twenty cases of stricture found nine which he ascribed to obstetric tauma. Strictures have followed operations for hemorrhoids, fistula, and prolapsus recti. Cripps in seventy cases found one of tubercular origin. In the "Medical and Surgical History of the Rebellion" there is not a single case recorded in which stricture followed dysentery. Stricture is more common in the female than in the male sex, in the ratio

of three to one. Penet studied post-mortem the location of stricture in fifty-eight cases, and found them situated at the following distances:—Commenced at the anus in four, below 6 cm. ($2\frac{1}{2}$ inches) in thirty-two, at 6 cm. in three, between 6 and 9 cm. ($3\frac{3}{8}$ inches) in seven, above 9 cm. in five, and at the junction of the rectum and colon in five. The symptom first noticed is constipation alternating with diarrhœa, or the discharge of bloody mucus. Vomiting, anorexia, and emaciation, accompanied by hectic fever, with headache and vesical disturbances, are among the later symptoms; acute and complete obstruction is rare, the patient generally dying from exhaustion or some intercurrent disease before this occurs. A positive diagnosis can only be made after a local examination. Treatment may be by dilatation, electrolysis, internal and external proctotomy, inguinal or lumbar anus, plastic operations, anastomosis, and excision, perineal or sacral. The treatment by perineal excision or resection, after Dieffenbach and Volkman, or as Van Hook has termed it, modified amputation of the rectum, is the best method of treating non-malignant rectal strictures which are not situated above the peritoneal level. As an argument in favour of the superiority of this method, and as a means of describing the technic, I report two cases of rectal stricture in which permanent cures were attained by amputation of the strictured portion of the gut.

Case 1.—Mrs. A. J. B., aged 30 years. About six years before admission to the hospital she began to have symptoms of rectal disease. At first she noticed a bloody, purulent discharge from the bowel associated with considerable pain and tenesmus on defecation. About one year after the appearance of the first symptom she became aware of increasing difficulty in having a bowel movement. At the time I saw her her bowels moved about once a week, and then only after repeated efforts. At such times a large quantity of fluid fæces, blood, and pus was discharged. About one year before a fistula had opened on the buttock at the left of the anus. The patient was greatly emaciated, pallid, and very weak. Numerous copper-coloured scars were distributed over the body; lymphatic glands moderately enlarged; heart and lungs negative; abdomen distended. Patient complained of constant pain over the whole abdomen, and marked tenderness in the right iliac fossa. Rectal examination showed a large ulcer just above the anus, mostly on the posterior surface of the gut. Above the ulcerated area, at a distance of $1\frac{1}{2}$ inches from the anus, was a circular constriction, which would just admit the tip of the finger, but through which the finger could not be forced. On examination with a sound it was found that a No. 28 (French) urethral sound would just pass through the strictured portion of the gut. On vaginal examination, the upper limit of the stricture could be felt, which showed it to be of the annular variety, about one inch in length. One inch to the left, and a little behind the anus, there was a fistulous opening from which was discharged bloody pus. A sound passed into this fistula apparently passed into the rectum above the stricture, and could be felt through the recto-vaginal septum. A few days after admission an incision was made, laying open the fistulous tract, and completely dividing the stricture and

posterior wall of the rectum. The sinus was then thoroughly scraped with a sharp curette, the bowel washed out with sterile water, and the wound packed with iodoform gauze. Rapid improvement in the patient's general condition immediately followed, the pain disappeared, the appetite improved, and the temperature became normal within a few days. At the end of six weeks a radical operation was attempted. The wound had almost healed by granulation, and ulceration had nearly disappeared. The patient was placed in the exaggerated lithotomy position and the part exposed by stretching the sphincter, which, of course, re-opened the wound in the posterior rectal wall. The rectum was then denuded of its mucous membrane from the mucocutaneous junction to the lower limits of the stricture. This dissection was carefully made so as to avoid injuring the underlying sphincter. The hemorrhage at this stage was profuse, but was easily controlled by pressure and hæmostatic forceps. The rectal wall was now divided throughout its entire circumference at the lower limit of the stricture, and by careful dissection the entire cicatricial mass was separated from the surrounding tissue. During the process of separation traction was made on the strictured portion of the gut, so that when the mass was entirely free it protruded beyond the anus. The rectum was then amputated just above the stricture and the cut end attached to the skin, first by three deep sutures, and then by a row of superficial intermediate sutures. A rubber tube six inches in length and three-fourths of an inch in diameter, wrapped in iodoform gauze, was introduced into the rectum, while gauze drainage was placed in the wound and an ordinary antiseptic dressing applied. The after-treatment consisted in frequent change of dressings, liquid diet, and keeping the bowels inactive for one week. The patient left the hospital about six weeks after the operation, apparently in perfect health. Twenty-one months after the operation she was still enjoying good health without any return of the stricture and with excellent control of the sphincters.

[The second case is omitted here.]—*Medical News, July* 9, 1898.

94.—DISEASES OF THE UPPER RECTUM AND SIGMOID FLEXURE.

By James P. Tuttle, M.D.,
Professor of Diseases of the Rectum in the New York Polyclinic.

[From Dr. Tuttle's paper.]

Neoplasms, while not the most frequent of the pathological affections of the sigmoid and upper rectum, are of paramount importance from a diagnostic point of view. The early symptoms of tumours of the intestine are so obscure, and so often identical with those of simpler diseases, that they are frequently mistaken for functional or inflammatory disorders and so treated until it is too late to cure the patient by operative procedures. Especially is this true of the first and most important one to be described—viz., cancer. The frequency of this growth in the rectum, sigmoid, and colon, the stealthiness of its

invasion, the obscurity of its early symptoms, are well known to all of us. The fact that its early removal gives the patient comparatively long relief, if not absolute cure, has been well established, and emphasises the importance of any means that will assist us in an early diagnosis of this disease. Carcinomas can be seen and recognised almost from the first appearance of symptoms, if they can be brought into view, and it is my firm conviction that the systematic use of the Kelly tubes in all cases of irritation of the rectum, sigmoid, or lower colon would reduce the mortality from cancer in these parts at least 50 per cent. Even before the continuity of the mucous membrane is broken, the red, indurated spot of invasion may be recognised through the tube and felt with a probe, and when ulceration has begun the appearance is so typical that mistake is almost impossible. The red, congested ulceration, nodular, covered with muco-pus, bleeding upon the slightest touch, involving or attached to the muscular wall of the gut and causing more or less constriction in its calibre, are typical appearances and can scarcely be mistaken for any other disease when seen. But the symptoms produced by this same condition are so like those of other diseases that diagnosis from them alone is very likely to result in error. The early symptons vary greatly. There may be diarrhœa or constipation, there may or may not be pain ; loss of blood may be an early or late symptom, but there is nearly always present flatulence, symptoms of intestinal indigestion, more or less tenesmus, and frequent inclination to go to stool without result. Loss of flesh is not a constantly early symptom, and when it does occur can easily be attributed to the imperfect assimilation of food consequent upon the indigestion. It becomes thus all the more important that actual examination of the parts should be made in all patients suffering from persistent symptoms such as these :

Fibrous and adenoid polypi, while common in the lower rectum, are not frequently seen in the sigmoid and upper rectum, but they do occur. They produce local and reflex irritations. They may cause constipation, and although they do not cause death, the entire functions of the alimentary canal may be disturbed by them, and a condition of invalidism be indefinitely prolonged by their existence. Papillomata are rather a rare growth in the rectum, so far as my experience goes. They occur, however, and may be found at any point from the anus upward. These growths are much more difficult to remove than the fibrous and adenoid polypi on account of their broad attachment to the mucous membrane and short pedicles. They are composed of numerous arteries held together by a connective-tissue stroma and covered with epithelium. They bleed freely upon handling, and when they are cut or twisted off dangerous hemorrhage is

likely to follow. The symptoms are almost indentical with those of cancer of the rectum, and even when brought into view the unpractised eye may very easily mistake them for epithelioma. They may be distinguished, however, by the healthy condition of the mucous membrane at their base, the absence of infiltration in the intestinal wall, no constriction in the intestinal calibre, and, above all, by the fact that they nearly always occur as multiple growths with absolutely healthy areas of mucous membrane between them. Flat, broad-based adenoid growths are comparatively frequent in the lower rectum, but are rarely seen above three or four inches from the anus. I have seen two cases through the tubes, six and seven inches up the rectum respectively. There was a condition resembling the adenoids of the nasopharynx. They were moist, soft, glandular-looking growths, pale in colour, and confined to the posterior wall of the intestine. I removed them by cauterisation. One patient was completely cured; the other was benefited but not cured, as he suffered from an atony of the intestinal walls which nothing seemed to benefit. It is evident that submucous growths, and those attached to the outer wall of the gut, could not be seen through this instrument. Fortunately, however, most of the neoplasms which develop in the intestine begin in the mucous membrane or just beneath it, and can be certainly diagnosticated when within range of the tube. One case of sarcoma of the rectum has been seen and the diagnosis which had been made by the fingers verified through the short tube. This growth was low down in the rectum, however, and could have been seen through other instruments.

As to the treatment of neoplasms in the sigmoid and upper rectum, little need be said in this paper. The malignant ones should be radically removed by the sacral or inguinal route, as appears most favourable in each individual case. When the tumour is confined to the sigmoid, my present opinion is that the inguinal operation is quite as rapid, produces less shock, and is not so liable to post-operative complications as the sacral. But when the upper end of the rectum is involved alone, or with the sigmoid, then the sacral method is the most feasible. The limitations of operation consist in the physical condition of the patient and the involvement of contiguous organs. When the growth has extended to the bladder, the uterus or its appendages, or to the pelvic walls, operative interference—*i.e.*, radical removal—is not advisable. When the tumour is freely movable, however, thus indicating that it is confined to the intestinal walls, the higher it is in the sigmoid the more favourable it is for operation. As to polypi and papillomata, they may generally be dealt with through the tube itself. Polypi may be removed by either a wire snare or by crushing the pedicle with a long forceps, and leaving the forceps to cut

through, or by catching the tumour with a volsella forceps, twisting it off below the pressure forceps. I have removed them in both ways with perfect satisfaction, although I believe the employment of the snare is the more exact method. Adenomata may be either crushed off by alligator forceps or removed by cauterisation. By the former method we are able to obtain specimens for examination and thus determine their nature, whether malignant or not—a not inconsiderable advantage; and besides, we can never be absolutely certain that cauterising agents will not burn too deep and produce perforation. It will thus be seen that the field of the tube, as an operative instrument, is limited, but so far as diagnosis is concerned we are just beginning to learn its possibilities.—*New York Medical Journal*, *July* 2, 1898.

ORGANS OF URINE AND GENERATION.

95.—SEPTIC INFECTION OF URINARY TRACT.

By C. Mansell Moullin, M.D., F.R.C.S.,
Surgeon to the London Hospital.

[From Dr. Moullin's remarks in the discussion at the meeting of the British Medical Association, 1898.]

As a matter of fact, the urinary organs are liable to the attacks of septic organisms in the same way as all the other structures in the body, perhaps to an even greater degree, and, making allowances for certain peculiarities of structure and function, the consequences are essentially the same. So long as they are healthy the kidneys are free from organisms; it is even probable that they possess a germicidal power in greater degree than most other organs; they are engaged in separating off an aseptic fluid, the urine, from the blood, which is itself aseptic, and the urine passes down the ducts and collects in the reservoir, the walls of which are absolutely devoid of germs. The aseptic character of the urine was first demonstrated by Pasteur years ago, then by Lister and many others, and anyone who chooses to take the trouble to draw the urine off, with sufficient precautions (and the trouble is a very great one), can prove it for himself. So long as the organs and the urine are free from micro-organisms any operation can be performed upon them without causing any other ill result than that which is due to shock, namely, either retention or suppression of urine. Unfortunately, the urinary organs are particularly liable to be attacked. The germs may reach them in various ways. They

may come through the blood stream, infective emboli becoming caught in the vessels of the glomeruli, the walls of which give way and discharge their contents into the urinary passages. They may come from neighbouring organs through the lymph stream. This has been proved, so far as the rectum is concerned, in the case of animals. Many of the cases of unilateral pyelitis occurring during pregnancy are caused in this way. The ureter is obstructed ; some transient intestinal disturbance enables the bacillus coli to penetrate the wall of the bowel, and it enters directly into the pelvis. The same thing is often met with in cases of salpingitis and endometritis, the germs passing directly through the walls of the neighbouring organs, and at last infecting the urine. But undoubtedly the chief mode of infection is directly from without, through the urethra. In men this is difficult, apart from instrumentation, for anatomical reasons. In women it is very easy—so easy that cystitis often arises, merely from the recumbent position necessary after severe operation preventing the bladder being emptied. But there are corresponding disadvantages. It may be difficult for the germs to get in, in the case of men ; it is equally difficult for them to get out, especially if there is any residual urine ; while with women nothing can be easier.

There are therefore two modes of infection—one through the tissues ; the other through the urine. In the former case of course the urine becomes infected at once. In the latter the tissues may not become infected at all, and then what is known as bacteriuria is established. This merges by indefinite steps into slight suppurative cystitis. If the germs acquire greater virulence, or the wall of the bladder is injured in any way, inflammation sets in at once ; so that naturally there can be no line drawn between bacteriuria and suppurative cystitis. These cases are sometimes spoken of as catarrhal cystitis, but the term is misleading, and should be dropped. I agree with Guyon's school that the colon bacillus is the organism most frequently present in septic diseases of the urinary organs ; and I am glad to hear that Professor Rovsing has found it in a large proportion of his later cases. Of course, the fact that the organism is the most frequently present is no proof that it is the cause to the exclusion of others, and it is highly probable that cases in which there is mixed infection are the worst. But there can be no doubt that the colon bacillus is capable, under special circumstances, of acquiring a virulence that is amply sufficient. Its frequency is to be accounted for by the ease with which (when there is any intestinal disturbance) it can traverse the wall of the intestine and infect the urinary organs either through the blood stream or the lymphatic system ; and also by the ease with which it can be carried in through the urethra. The rigors

that are met with after internal urethrotomy are due to the toxins produced by these organisms being rapidly driven into the circulation. The deaths from so-called exhaustion with typhoid symptoms that sometimes occur at the beginning of catheter life are due to slow septic poisoning, to the bladder being left half full instead of being emptied thoroughly and kept empty; and the symptoms they present are identical with those that occur in old men when operation wounds become septic. All the complications of urinary surgery, in short, with the exception of retention and suppression of urine, are forms of septic poisoning in one shape or other. The general principles of treatment, therefore, are easily laid down.—*British Medical Journal, October* 29, 1898.

96.—GONORRHŒAL PYELITIS AND PYELO-NEPHRITIS.

By J. Henry Dowd, M.D., Genito-Urinary Surgeon to the Buffalo Hospital, &c.

[From Dr. Dowd's paper:]

Pyelitis or pyelonephritis, when secondary to gonorrhœa, and especially in the subacute or chronic stage, seems not to be recognised as readily as it should. The only excuse that can be offered is that authors say so little about it, some almost questioning such a malady being due to gonorrhœa in any stage. As regards the symptoms, there seem to be two extremes—one where the onset is scarcely noticeable by the patient or his attendant, and the other where severe local and constitutional disturbances manifest themselves. A daily visual, or possibly microscopical, examination of the urine from a gonorrhœal case is an absolute necessity. The microscope, however, is the only positive means of determining the involvement of the pelvis when the process is unaccompanied by severe constitutional symptoms. A chill, high fever, and full, bounding pulse, with excruciating pain in the back, may or may not be the first symptom present. There is frequency of urination, and if the secreting portion of the organ is involved the urine may be decreased in quantity to twelve or fourteen ounces in twenty-four hours. The face at times shows the effects of the involvement of these important organs. Great pallor, most anxious expression, twitching of the lips, and, in one case lately seen, purpura hemorrhagica almost covering the entire upper part of the face are the symptoms noted. There is great prostration, the patient at times, owing to this and the pain, having to

take to his bed. The urine is the only positive means of diagnosis, but the examination of it must be thorough. Blood is usually present, but at times in such small quantities that only a three-minute centrifugalisation or the microscope will reveal its presence. Casts will generally be found—if not tubular, mucous cylinders showing kidney congestion. The pelvic epithelium, especially if in shingle-like form with clumping of the pus cells, is the most positive indication of pelvic involvement. Hyperacidity, with albumin in excess of that due to pus, is a constant condition. As the inflammation becomes chronic, anæmia, flabbiness of the muscles, nervousness, constant brooding about one's self, nightly calls to urinate, and a long train of other symptoms arise. It is not my purpose to speak of any but the acute condition, for it is only in this that a permanent cure can be hoped for. These patients can be cured if they are discovered early and heroic measures are used. Confinement to bed with milk diet is indispensable.

As a routine measure it is advisable to place several dry cups over each loin, and the bowels should be made to move every day. The main indications sought for with drugs are to lower arterial tension, increase the quantity of urine, rendering the same as unirritating as possible, and act on the pelvic and renal mucous membrane with an astringent. The above are carried out nicely and effectively by the administration of aconite, lithium citrate, and hamamelis, in large doses every three or four hours in a glass of water, preferably distilled. If the case is discovered early recovery is prompt, even though the tubules have been extensively involved. The urine should be watched for some time thereafter, as an indiscretion in diet or malt beverages may bring on a relapse; in fact, all food rich in the oxalate of calcium and liquors, except possibly a little light wine, should be avoided for months. A brief history of two cases will show the extremes to which the symptoms may manifest themselves :—

Case 1.—E. C——, referred to me in March, 1898, with a first gonorrhœa of two months' duration. Examination showed a free discharge; right epididymis swollen; both glasses of urine containing pus, no albumin, sugar, blood, or casts; no history of Bright's or any disease that would favour such a condition. Under appropriate treatment the discharge quieted down at once and the urine cleared. On the fifth day I noticed the upper part of the face and forehead covered with dark red blotches (purpura). The urine was very red, and upon examination I found an immense quantity of tubular casts, blood corpuscles, renal and pelvic epithelium. There was no doubt of the diagnosis of ascending pyelonephritis, and without a symptom noticeable to the patient, except possibly the dark red spots already referred to. When I closely questioned him as to the amount of urine passed, he said that for half a day he had made but very little water. It must be remembered that I saw this patient only twenty-four hours before the examination that revealed the casts,

&c. The beforementioned treatment was at once ordered and examinations of the urine were made daily; not a cast or pelvic cell could be found on the fifth day. It is now about three months since the attack, and frequent examinations have failed to show any change.

Case 2 will show the most aggravated symptoms. M. S——, gonorrhœa in 1886, no cystitis or epididymitis. Second attack in 1891; cystitis, but after a long siege entire recovery. Third attack in 1893. For two years there was blood following urination, when he was suddenly seized with severe pain in the left groin; the urine was thoroughly mixed with blood, and the patient had to pass the same every hour or so. As I did not see this case until about a year later, it is impossible to speak as to involvement of the secreting portion of the kidney, but on my first examination I found clumping of the pus cells and pelvic epithelium in shingle-like formation, the urine being cider-like in appearance, due to the pus. Deep pressure over the left loin caused slight pain, and cystoscopic examination showed a free discharge of pus from that side (left kidney). His mother having died of phthisis, a careful examination was made for tubercle bacilli several times but none could be found. This case is incurable on account of its chronicity.

Of four or five cases lately seen by me this is the only one that had any symptoms of cystitis and in which the cystoscope showed any bladder involvement. Several other cases showing symptoms even less pronounced than the first might be cited, but I think the above will suffice to show that it is always well to be on the look-out for serious conditions which can arise during the course of a gonorrhœa.—*Medical Record, June* 25, 1898.

97.—DIFFERENTIAL DIAGNOSIS OF VESICAL AND RENAL HÆMATURIA.

By Dr. David Newman.

Various procedures have been employed to ascertain whether the blood originates in the bladder or flows into it from one of the kidneys, and methods have also been devised to ascertain the nature of a vesical lesion. Examination of the bladder by means of the sound, the catheter, or with the finger have been at different times suggested and carried out in practice. When one reads Sir Henry Thompson's description of how exploration of the bladder with the finger should be carried out the marvel is that the injury done to the patient was not appalling. Again, Kuster has employed a curette and Chismore used a calculus aspirator for diagnostic purposes. The use of such imperfect methods is now to be condemned, seeing that we have at our disposal the electric cystoscope and ureter catheters, but in order to employ these instruments the surgeon must educate himself in their use, just as in the use of any other instruments of precision. The cystoscope may be used both in men and women, and when properly employed the examination subjects the patient to very little risk—less, indeed, than the use of

a sound. The sound is too frequently employed in cases of hæmaturia. It is only when the bleeding is the result of a vesical calculus, or an enlarged prostate, or an hypertrophy of the bladder, that any reliable information can be gained by the employment of the sound, and when the hæmaturia is due to other lesions much harm may be done by the rough manipulation necessary to examine the bladder with that instrument. The educated use of the cystoscope, being more gentle, is less dangerous, and it is more valuable, but it should always be used with strictly aseptic precautions. It must be remembered that where the bladder or other portion of the urinary tract is the seat of disease the risk of septic contamination is much greater than when these parts are normal, and when septic contamination does occur the gravity of the condition is proportionately greater. In all cases, not only should the cystoscope itself be thoroughly sterilised, but the meatus and surrounding parts should also be carefully washed and rendered as free from contaminating particles as possible, and after examination has been made the bladder should be carefully washed out with a fresh supply of suitable antiseptic solution. Cases undoubtedly have been recorded where, especially in tuberculosis of the kidneys and bladder, dangerous pyelitis and cystitis have followed the use of instruments, but I feel convinced that such evil consequences could not have resulted if the precautions I have just indicated had been carefully attended to. I first suggested the employment of the electric light for examination of the human bladder in 1883 by introducing an electric endoscope into the female bladder. At that time the instrument was simple, and for the female served its purpose well, but since then many improvements have been made, so that now for many years the male bladder has been open to inspection by means of Leiter's instrument. By making careful examination with the cystoscope it is usually easy to ascertain whether or not the blood is from the bladder, but in a few instances it is not safe to conclude from the fact of no lesion being observed in the bladder that the hæmaturia is therefore either renal or ureteral in its origin. When, however, the blood is seen by the cystoscope flowing from the orifice of a ureter, or more rarely from both ureters, the observation is of the highest importance as indicating the source from which the blood comes.—*The Lancet*, *July* 2, 1898.

98.—ILLUMINATION OF THE BLADDER.

By W. H. Harsant, F.R.C.S. Eng.

It has long been the aim of surgeons to devise a means by which the interior of the male bladder may be illuminated and

seen in the same manner and with the same safety that the vocal cords in the larynx or the fundus of the eye may be examined. For this purpose various kinds of cystoscope have been introduced at different times ; but all were more or less unsatisfactory until Dr. Max Nitze and Mr. Leiter together worked out the details of an electric cystoscope, by which a small electric lamp might be introduced into the bladder so as to light up its interior while an examination of its walls might be made by a special optical apparatus placed in the interior of the shaft. At first the instrument was encumbered by an elaborate water-cooling apparatus, for preventing the elaboration of undue heat which might injure the bladder walls : but at a later period various improvements were introduced by which this cooling apparatus might be dispensed with ; and since Hurry Fenwick devoted much time and trouble to perfecting the electric cystoscope, we have been possessed of an instrument which, in skilful hands, and when used with all due precautions, has served a very useful purpose, and has undoubtedly been of much service. But at the same time there were many objections to it, some of them of so serious a nature as to prevent its very frequent use. Among them we may notice the following :—(1) Considerable practice is necessary for its successful manipulation. In the hands of Hurry Fenwick and others, who have long worked with it, it may be made to yield valuable results ; but when used by the average surgeon, with only scant opportunities for practice, the result is often most disappointing. (2) It is necessary to have five or six ounces of a perfectly clear fluid in the bladder. In cases of tumour of the bladder, with free hemorrhage, this is frequently impossible, and hence its use is often contra-indicated when it is most desired. (3) Numerous accidents have occurred from its use, especially from burning the walls of the bladder and from breakage of the lamps.

An immense advance in cystoscopy has, however, lately been made by Dr. Howard Kelly. When he first succeeded in his vesical and ureteral examinations in women in the spring of 1893, he expressed a conviction that the bladder in the male could also be investigated in a similar manner. So positive was his conviction that he had a long, straight, male cystoscope made by Messrs. F. Arnold & Sons, of Baltimore, on November 18, 1893. He had no opportunity for testing this instrument until November, 1897, when he was able to try it on a man of about 48 years old, who had a persistent hæmaturia of undetermined origin. After due antiseptic precautions and washing out the bladder, it was filled with a saline solution and first examined with the ordinary cystoscope. For the most part the bladder-wall was found normal ; but at the base a dark, tufted, villous area was found from which a cloud of blood kept rising and

mingling with the clear medium. The conclusion was reached that this was probably a vesical papilloma. The bladder was then emptied with a catheter, and the patient placed in the knee-breast position, with the chest close down to the table, the elbows spread apart, and the thighs slightly drawn up under the abdomen. The straight cystoscope was then introduced, eight millimetres in diameter, and with a tube eighteen centimetres long, with a funnel-shaped opening and a diminutive handle like those attached to his first cystoscopes used in women. This cystoscope was inserted into the bladder without difficulty while the patient was still in the dorsal position; when he assumed the knee-breast position the obturator was drawn out, and air at once entered the bladder. The examination of the bladder was now conducted by looking into it through an ordinary head-mirror, reflecting an electric light which was held close to the sacrum. The base of the bladder came perfectly into view, and the posterior walls showed the characteristic pallor, with small vessels branching here and there over its surface; it could be seen that the base was simply coated with blood which had accumulated there in the most dependent position, and that there was no papilloma or other growth present. The trigonum and the interureteric ligament were injected and plainly defined. Later experiments by Dr. Kelly demonstrated that the first speculum was longer than necessary, and that its calibre might be made larger without risk of injuring the average urethra. The cystoscope he now uses consists of an open cylindrical tube, eight millimetres in diameter, fifteen and a half centimetres long, with a funnel-shaped opening twenty millimetres long and twenty-seven millimetres in diameter at its outer orifice, blackened on the inside and on the rim to avoid the reflection of the light. A stout handle, eleven centimetres long and twenty-five by twelve millimetres thick, is attached to the funnel, and affords a good grasp to the hand, enabling it to control the speculum perfectly. The instrument is best introduced while the patient lies on his back, and when it has entered the bladder the patient is aided in rolling over on his side, and then his face, and then in getting up on his hands and knees. This is managed by the assistants, while the surgeon is engaged in retaining the speculum in place. In taking the knee-breast position it is important to see that he brings his chest close down to the table with the elbows spread out wide apart and the face turned sideways, at the same time the thighs are vertical or slightly drawn up under the abdomen. If he is allowed to crouch or keep his back arched, or to take any other of the numerous positions patients try to assume than the one just described, the examination will probably prove unsatisfactory, as the bladder will not distend with air.

The next step is to introduce a small speculum into the rectum, to allow it to fill with air: if this is not done, the bladder expands so much that the base of it disappears up in the direction of the sacral hollow out of sight; by distending the rectum with air the base of the bladder drops down into the plane of vision and within easy reach of inspection. The obturator is now withdrawn from the cystoscope, when the atmospheric air enters and distends the bladder with an audible suction sound. The illumination of the interior of the bladder is effected either by direct light, which is the best way, or by a light held close to the sacrum and reflected by a head-mirror of about twenty-five cubic centimetres focal length. If an electric light, sixteen candle power, it is held close to the sacrum, with a white enamel-painted tin reflector back of it; an ordinary head-mirror will direct sufficient light into the interior of the bladder to enable one who is practised in this way of examining patients to see all the details with perfect clearness.

Dr. Weir pointed out to Dr. Kelly that the use of straight tubes for inspecting a limited portion of bladder, with the patient in the dorsal position, dates as far back as the work of Desormeaux, published in 1865. The procedure, from being one of a very limited utility, has been elevated into an important method by the postural atmospheric distension of the bladder; one which bids fair to largely supplant the electro-cystoscopic methods of Nitze, both in the fields of diagnosis and treatment. —*Abstract in the Bristol Medico-Chirurgical Journal, September*, 1898.

99.—ULTIMATE RESULTS OF CASTRATION AS A MEANS OF RELIEF FOR OBSTRUCTIVE HYPERTROPHY OF THE PROSTATE.

By Lewis Stephen Pilcher, M.D.

In June, 1896, I published in the *Annals of Surgery* the results of the cases which had been under my personal care in which removal of the testicles or section of the vasa deferentia had been resorted to for the relief of obstructive hypertrophy of the prostate. I was then able to report eight cases of castration and three of vasectomy. The amount of relief to the obstructive symptoms which had followed in these cases was very notable, and seemed to justify the conclusion that in these procedures surgery had gained a most valuable resource in dealing with conditions that were not only harassing, painful, and dangerous, but often intractable to any available practicable

means of treatment before supported. In the eighteen months that have since elapsed there have been two additional cases in which I have resorted to castration; these I desire now to add to the record. [The details of the two cases are omitted here.] The favourable immediate results obtained in these two cases, now first reported, are similar to those experienced in the preceding eight, and are like those met with in a very large number of cases which have been reported by others. Castration done on a patient moribund with uræmia; castration done on a patient profoundly prostrated by sepsis from a suppurating prostate or kidney, or necrotic bladder; castration done on a patient with over-distended bladder, with pressure effects upon the kidneys; castration done on a patient worn out with the suffering caused by the presence of a calculus in the bladder will, if unaccompanied by the measures required for the immediate relief of the urgent conditions, be productive only of harm. It is quite evident that castration should not be resorted to in such cases as these mentioned until after the pressing emergency has been relieved by the use of appropriate measures and a favourable state has been created for the introduction of a procedure which may gradually, and possibly only after the lapse of weeks, induce a subsidence of the prostatic obstruction. The value of such a course is strikingly illustrated in two cases of my series, in each of which by suprapubic cystotomy free bladder drainage was provided for and maintained for some weeks before resort was had to castration.

Of importance is the possible effect upon the mind and disposition of the man produced by withdrawing from him the special stimulus furnished to the economy by the glandular products of the testes. Acute mania, dementia, and gradual loss of vigour, causing the patient after a time to succumb to conditions which before the removal of the testes had been well borne, are the states which have been more especially ranked as fairly frequent sequelæ to the operation. The later history of castrated prostatics is therefore of special interest from this point of view. In my previous report I gave the details of one case in which a distinct tendency to dementia developed immediately after the operation in a man, 72 years of age, with an atonied over-dilated bladder, dribbling at 37 ounces. At the end of three months, however, by which time the function of urination was being normally performed, his mental condition had greatly improved. His later condition is unknown to me. One man, 68 years of age, died of dysentery some months after castration. One man (the second case reported in this paper) is of too recent date, as an *operé*, to have any late history. The remaining seven cases I have been able to follow, and their condition to-day, in brief, is as follows:—

Case 1.—Time since castration, three years; present age, 77; hale, hearty, and active physically and mentally. Still has five ounces of residual urine, which he evacuates with catheter night and morning. Urinates spontaneously every two or three hours.

Case 2.—Time since castration, two and a half years; present age, 58; a clergyman in charge of an important church; states that his physical vigour and his mental grasp have notably improved since operation. His originally long over-distended bladder, dribbling with 64 ounces, still halts with 10 ounces of residual urine, requiring catheter for its removal.

Case 5.—Another clergyman. Time since castration, two and a quarter years; present age, 54 years; still continues to preach with acceptability and to administer the affairs of his parish with prudence. Still has some residual urine and a chronic cystitis which requires the use of a catheter and daily irrigation of the bladder to keep under control. Reports that urination is now attended with more difficulty and pain than it was during the first year after the removal of the testes.

Case 6.—Time since castration, two years; present age, 67 years; general health excellent; mental grasp undiminished; still attends actively to the affairs of an important business. His chief annoyance has been the frequent occurrence of uncomfortable flushes of heat similar to those experienced by women at the time of the menopause.

Case 7.—Time since castration, one and three-quarters years; present age, 64 years; in good health, sound mind, and free from all urinary disturbance.

Case 8.—Time since castration, one and three-quarter years; present age, 72 years; in good health, sound mind, and free from all urinary disturbance.

Case 9.—Time since castration, one and a half years; present age, 74 years; is hearty and vigorous; devoted to equestrian exercise; manages with skill a spirited horse.

This completes the record of my personal experience to January 1, 1898. Certainly in these cases the relief from the special sufferings and difficulties incident to obstructive prostatic hypertrophy has been great; in some of the cases it has been complete, the freedom of urination having been restored to the normal point; in yet others some obstruction persists, even after the lapse of some years, requiring catheter help at times, but in a degree very much less than before castration. This relief has been secured by a procedure that has been free from pain and has been attended with but little, if any, risk to life. The worst blur upon the record is the infliction of a few weeks of childishness upon one patient. The procedure is one that demands no special surgical experience, nor elaborate *ménage*, nor peculiar or costly instruments for its proper performance. It seems to me that it has at least won a place for serious consideration whenever the problem of the relief of urinary obstruction due to prostatic hypertrophy is presented for discussion.—*Annals of Surgery, January*, 1898.

100.—ON A MODE OF STRETCHING SOME URETHRAL STRICTURES.

By Reginald Harrison, F.R.C.S. Eng.,
Surgeon to St. Peter's Hospital.

[The illustration has been omitted here.]

In some remarks on urethral stricture previously published I have referred more particularly to its treatment by dilatation and by certain forms of urethrotomy or section. I have also described some instruments I usually employ with these processes.

In an obstructive disease which presents so much structural variety cases are occasionally met with where, either from the urgency of the symptoms or the nature of the stricture, it will be found impossible to utilise these methods, and modifications of them may be substituted with advantage. The rarer cases of advanced stricture to which I am now referring usually owe their urgency to being complicated with some degree of retention of urine which also calls for surgical aid. A man of middle age, I will say, has been suffering from a neglected stricture for some months or years. Eventually he is either suddenly seized with inability to pass urine at all or he becomes seriously inconvenienced by the increased tension of a never-emptied bladder. Let it be assumed that the stricture is so hard, contracted, or tortuous as to resist hot baths, opium, and catheterism with all forms of flexible instruments, and access to the bladder can only be effected by a fine metallic catheter. Possibly this even may require the aid of an anæsthetic. If such a catheter is tied in it not unfrequently slips out during the night and all the trouble of replacing it or substituting a somewhat larger one, has to be repeated, and not always with success. Even if it is retained it may not be possible to substitute a larger one, and thus the progress of the case in giving increased relief to the patient is either hindered or proves impossible. Nor is the retention of a fine catheter, such as No. 1, 2, or 3, in a septic bladder to be desired, even though some relief to tension is afforded, any more than a drainage tube which will not drain is of service with a putrid abscess. Unless the relief is sufficient in either case sepsis is sure to follow if it has not already commenced. With a small catheter such as those I have referred to it is impossible to wash out and disinfect the bladder, and puncture or any forms of cystotomy or urethrotomy are not always advisable under these circumstances. It is in cases of this type, when the surgeon has succeeded in passing a small metallic catheter through a tight and difficult stricture into a more or less

distended bladder, that the inability to expand the instrument at the same time, and so to stretch the stricture before withdrawing it, is not unfrequently experienced. With this object in view I described some years ago an instrument constructed on the lines of a Holt's dilator which appeared to meet the difficulty, and I have since continued to use it with advantage.

It is provided with a pilot guide as well as with a screw top in case the former proves useless. It contains a fine test catheter on which the dilators run. It is fitted with a series of seven rods by which dilatation may be carried from a No. 3 to a No. 12 (English gauge), and the introduction of the latter is controlled by a spiral spring which consolidates the instrument and makes it act as one piece. On the dilator being passed, as an equivalent to a No. 3 catheter, the stylet is withdrawn and the correct position of the instrument is judged of by its transmitting urine and from its position relative to the rectum. Then the introduction of the dilating rods in accordance with their number and size is proceeded with whilst the anæsthetic is continued. This is to be done deliberately so as to stretch and not to lacerate the stricture, the process usually lasting, according to the rigidity of the contraction, from about ten to twenty minutes. When the largest rod is reached the fully distended instrument, now representing No. 12 in calibre, is quietly withdrawn and the urine that remains is drawn off by a full-sized silver catheter, which may be passed easily. The bladder is then washed out and disinfected and a soft catheter is tied in and retained for forty-eight hours or so. As the process is one of stretching alone rigors or fever rarely follow.

The subsequent management of the case merely consists in instructing the patient how and when to pass a bougie for himself and so to endeavour to permanently maintain the normal dimensions of his urethra. It is hardly necessary to illustrate the kind of case to which this treatment is applicable, as it will readily occur to those who have had any practical experience of them. In proceeding to adopt it the only drawback which is likely to happen is the case proving, on trial with an anæsthetic, to be an impassable stricture. Under such circumstances Wheelhouse's perineal operation would probably be selected as the alternative. Where, however, the dilator can be passed in the manner I have endeavoured to describe both patient and practitioner will be none the worse for knowing that the retention of urine has been relieved in such a way as will permit the introduction of a full-sized catheter into the bladder.—*The Lancet, August* 6, 1898.

101.—TUBERCULOSIS OF THE MAMMARY GLAND.

By Albert H. Freiberg,
Surgeon to the Presbyterian Hospital, Cincinnati.

[The case and other parts of the paper have been omitted.]

Clinically, primary tuberculosis of the breast presents itself in a variety of ways. It is probable, from a study of the clinical histories, that not infrequently the condition escapes recognition for a long time. This is likely to occur when it progresses slowly in an individual otherwise healthy, and when pain is either absent or insignificant. Thus, Shattock reports the case of a girl, 21 years of age, who six years before noticed a lump the size of a hazelnut in the left breast, which was occasionally the seat of slight and transient pain. During the last year the axillary glands were enlarged. Upon removal and histologic examination it proved to be typically tuberculous. On the other hand, the condition may be painful in its very incipiency. Not infrequently there is no pain whatever complained of until, with the advent of secondary infection, an acute inflammatory condition develops. As before remarked, the axillary lymphatic enlargement is apparently the first symptom in a considerable proportion of cases. In other cases this lymphatic enlargement has been absent altogether during the whole course. However, it occurs at one time or another in 75 per cent. of all cases, and, according to Delbet, suppuration occurs in the lymphatics, as a rule, before it does in the breast itself. The physical examination of the mamma will, as a rule, disclose a tumour, rather ill-defined, closely connected with the gland substance, but freely movable upon the wall of the chest and beneath the skin. The edge of the mass has not the sharply defined boundary of simple chronic suppurative mastitis, and not infrequently processes extend from the principal mass similar to those of carcinoma. The induration is most frequent in the external segment of the gland, and occasionally a firm cord of thickened lymphatics may be felt, continuous with those of the axilla. In consistence the mass is rarely uniform, save in the very earliest stages. Usual is the occurrence in some place or places of softened areas or even pronounced fluctuation. In some chronic cases retraction of the nipple has been described. The disease is one of young adults chiefly ; more than one-half of the cases have been described as occurring between the ages of 25 and 35 years, and in women with very few exceptions. The left side is considerably more often affected than the right.

Our chief interest in breast tuberculosis must be centred in the diagnosis. When liquefaction has occurred to a considerable degree, when sinuses have formed, or when the condition affects a young woman of pronounced tuberculous habit, the diagnosis

may be extremely easy ; on the other hand, when found in one more advanced in years, say 35 or over, and especially when but little softening has occurred, carcinoma may be ruled out with the greatest difficulty, or not at all. This may be true of chronic simple suppurative mastitis also, or even of the chronic interstitial form. When any degree of softening has occurred, an exploratory aspiration may determine the diagnosis definitely, as in my own case, by the withdrawal of broken down material in which tubercle bacilli may be found. A perusal of some of the casuistic literature on the subject has brought me to the conviction that mammary tuberculosis is by no means as infrequent as has been assumed by some. Thus, Albert speaks of having seen fourteen cases in all, and four of them within one year. The application of modern methods of diagnosis, and the examination for tubercle bacilli in particular, together with a more accurate knowledge of the clinical manifestations of mammary tuberculosis, will, I truly believe, cause some cases formerly classed as simple chronic abscess to be placed under the rubric of tuberculosis. This refers especially to those cases occurring in quite young unmarried women with no cause apparent for the development of abscess. As such an example I might cite a case reported by Marcus and operated by Ransohoff. A girl of 17 years, unmarried, had been suffering for years with severe pains in the breast, for which a physical basis had not been found. Rather suddenly there developed the symptoms of suppuration. Pus was discharged upon incision, but a fistula remained, necessitating a second operation, at which the gland was found riddled with suppurating foci. In conversation with the operator he acknowledged the possibility of its having been tuberculosis. The patient is known to be enjoying perfect health at present. The prognosis of this affection is about what we might assume from *a priori* considerations. If treated by radical surgical intervention, a recurrence *in loco* is in the extreme improbable, but the disease, betokening by its very presence a lowered power of resistance to the invasion of tubercle bacilli, and possibly an environment favourable to their development, is apt afterward to appear in other and more vital organs, the lungs in particular, and thus bring about a fatal termination. This has been the later history in quite a number of instances. In the treatment of mammary tuberculosis we have but to follow well recognised surgical principles. With Robinson and others I believe it unnecessary to enter the axilla unless there be an appreciable enlargement of the lymph glands. In refraining from partial operations upon the breast itself, and making the amputation in every recognised case of primary mammary tuberculosis, we can err only on the side of wisdom.—*Journal of the American Medical Association, June* 25, 1898.

AFFECTIONS OF THE EYE AND EAR.

102.—A PLEA FOR A MORE THOROUGH STERILISATION OF NOSE AND THROAT INSTRUMENTS.

By Adolph Bronner, M.D.,
Senior Surgeon to Bradford Eye and Ear Hospital;
Laryngologist to Bradford Royal Infirmary.

[From Dr. Bronner's paper.]

It is true that we cannot make the nose and throat perfectly aseptic, but surely this is no reason why we should not try to make those parts in which we wish to operate as aseptic as possible? I generally apply a 1 in 1,000 solution of perchloride of mercury in glycerine to the parts, and use a spray of the same strength. It is not true that no cases of serious, or even fatal, inflammation due to septic wounds have been recorded. Several have been published and many more have certainly occurred. And how about syphilis? Specific disease of the nose and throat is very common. Many surgeons argue that they use special instruments for syphilitic cases. But how about the doubtful cases, or those which have not been recognised as syphilis, or which have been thought to be syphilitic and were not? It is not always easy or possible at once to diagnose these cases. If we ourselves do not see many cases of syphilis acquired through the use of our own instruments, it is because these cases do not return to us but consult another surgeon, who does not, or perhaps cannot, examine the nose and throat. And how about our tuberculous cases? There is only one way of thoroughly sterilising instruments, and that is to boil them in water or 1 per cent. solution of bicarbonate of soda for at least five minutes. No instruments should be used for more than one patient without having been previously sterilised. There are, of course, innumerable kinds of sterilisers. I prefer one which is vertical (made by Down Bros.), and into which the instruments are dipped in a wire cylinder. After five minutes the cylinder is removed, and the instruments are left to dry for a few minutes; they are then rubbed with a clean, soft towel. As soon as I have used a certain number of instruments I pass them on to an attendant, who sterilises them in an adjoining room, and returns them in a short time, when they can be used again. In the same way the same instrument can be sterilised and used several times in the day, and we do not require such a large number as we should do if we only boiled them once a day. In hospital practice we should have a steriliser with boiling water on the table, and throw the instruments in as

soon as they have been used. The same method should be adopted with ear instruments, especially with Eustachian catheters. The amount of dirt and filth which accumulates in a catheter which is not regularly sterilised is remarkable, and this filth is naturally often blown straight up into the middle ear. Vulcanite catheters are an abomination, and should never be used.

The cheap laryngeal mirrors do not stand frequent sterilisation. Messrs. Hirschman, and also Dorfell, of Berlin, make a special kind, which have an additional coat of copper under the mirror, and which last for months. The galvano-cautery points generally used can certainly not be sterilised. I have had some made with strong copper sides, which do not easily bend, and in which the insulating silk only comes half-way up. The end is brushed after use, and left in a 1 in 500 perchloride of mercury solution for at least an hour. In Fraenkel's cautery the whole is encased in a metal sheath, so that it can be boiled. It is, however, rather large, and easily gets out of order.—*British Medical Journal*, *October* 22, 1898.

103.—GONORRHŒAL CONJUNCTIVITIS AND IRITIS.

By Frank S. Milbury, M.D.,
Ophthalmologist, Otologist, and Laryngologist to the Bedford Dispensary and Hospital, &c., Brooklyn, N.Y.

[From Dr. Milbury's paper :]

Treatment.—The great importance of warning patients suffering from gonorrhœa, or, in the case of women, from any other discharge as well, of the danger to their own eyes and to those of others living in the same room, in using towels, sponges, &c., in common, and of the consequent necessity of absolute cleanliness can not be exaggerated. One of the most important considerations, when only one eye is affected—and this, fortunately, is the rule—must be to protect the second from inoculation. This may always be done by tying it up in the following way :—The lids are gently closed and kept so by two or three strips of court-plaster. The hollow between the nose and eye is then filled up with absorbent cotton ; over this a piece of gutta-percha tissue is placed and the whole bound down along the edges with strips of closely-fitting adhesive plaster. Special care must be taken that this adheres well along the nose, and the patient, when in bed, should lie as much as possible on the side of the affected eye, to prevent the discharge from trickling

over to the other side and possibly loosening the plaster ; if it is properly applied there is, however, not much fear of this. Before tying up the sound eye it is well to thoroughly wash it out with an antiseptic solution of corrosive sublimate, 1/6,000 to 1/4,000. In this way the effect of inoculation, which may have taken place shortly before the patient seeks advice, may in some instances undoubtedly be neutralised.

It is certainly very trying for the patient to have the good eye occluded from vision at a time when the other, owing to the great swelling of the lid, is temporarily useless. He is thereby rendered very helpless and unable to go about alone, so that his spirits, generally depressed as he is, are not raised by his being put entirely in the dark. On this account it is well, where this is possible, to protect the sound eye in a manner which does not altogether interfere with its use. This may be done by strapping a small watch glass over the eye—Dr. Buller's method. This plan has the advantage of allowing one to observe the sound eye all along, and therefore the shield can be left on continually, whereas the ordinary occlusion bandage has frequently to be reapplied. After this is done we turn our attention to the inflamed eye. The treatment to be adopted will depend on the stage of the inflammation and the state of the cornea. When the discharge is only serous and the chemosis slight, pretty frequent washings with corrosive sublimate solution (1 in 5,000) and ice compresses, frequently changed, may be used, and the patient's room well ventilated and slightly darkened. When the inflammation comes to its acme, ice may be discontinued and nothing used but the antiseptic wash and a little vaseline smeared along the edges of the lids. Local bleeding is recommended, but it is of doubtful use ; still, it may be tried. The method generally in use is to make a large cut across the outer canthus with a pair of scissors. This, at the same time, tends to relieve the tension of the swollen lid on the eye. At this stage it is almost impossible to evert the upper lid, so that any attempt at the local application of caustic solution is neither desirable nor always possible. The cornea must be cautiously watched, and any symptoms of loss of vitality counteracted, if possible, by free incisions in the chemosed conjunctiva. However, this treatment is not always efficacious in arresting the dreaded complication, owing not only to lack of nutrition, by pressure on the anterior ciliary vessels, but to actual stasis in them. As soon as the upper lid can be everted without much difficulty, an application of nitrate of silver (5-10 grains to 1 oz.) should be made once or twice during the twenty-four hours, with the object of restraining the discharge and reducing the risk of subsequent inoculation of the cornea. Any ulceration of the cornea appearing at this stage may be treated by applying

directly to it the same caustic solution, unless it has begun to heal, when care should be taken that the nitrate of silver does not come in contact with it. Free exercise in the open air is desirable. Atropine to relieve congestion, the bowels kept free, good diet, and opiates when sleep cannot otherwise be obtained, constitute the treatment.

Gonorrhœal iritis develops in those cases in which gonorrhœa has given rise to a general infection; it is closely allied to rheumatic iritis, but is an exceedingly rare form. The inflammation is always severe, and the cause, owing to co-existing inflammatory changes in the joints, is apt to be overlooked. Gonorrhœal iritis always seems to occur in both eyes, though not always quite simultaneously, and it may be with different degrees of severity in the two eyes. Successive attacks of gonorrhœa are sometimes accompanied each time by iritis, and in other cases, although no fresh inoculation takes place, a return of the joint affections may be accompanied by a recurrence of the iritis as well. The local treatment is the same as for other forms of iritis. Potassium iodide in large doses seems to be the best general treatment at first, followed, as the inflammation subsides, by quinine and iron.—*Journal of the American Medical Association, September* 24, 1898.

104.—CORNEAL ULCERS AND THEIR TREATMENT.

By Percy Dunn, F.R.C.S. Eng.,
Ophthalmic Surgeon to the West London Hospital.

[From Mr. Dunn's paper.]

Simple ulcers of the cornea may be described as those in which the ulceration is unaccompanied by any distinguishing feature, such as vascularity, hypopion, sloughing, &c. This form of ulcer is most commonly seen among weakly school children. Perhaps the most troublesome symptom associated with it is photophobia, which, however, is very variable in degree. Sometimes the intolerance of light may be extensive; on the other hand, there may be very little or hardly any to speak of. At any rate, the size of the ulcer bears no relation to the intensity of the photophobia. In young children, for example, in whom acute blepharospasm has been present for some days, careful examination of the cornea under an anæsthetic may disclose an ulcer not larger than the head of a pin. Again, these simple ulcers are seen in connection with phlyctenular ophthalmia. They are generally superficial, and, after healing, scarcely leave any opacity in the majority of cases. Their

treatment is quite simple. If much photophobia be present cocaine and atropine drops may be used twice a day, and the eye at the same time bathed with warm water. A shade should also be worn, with a thin layer of cotton-wool under it in order to exert some pressure upon the closed upper lid, thus keeping the eye in a condition of physiological rest. Internally a tonic should be given, nothing being so efficacious as a preparation of iron; the tincture of the perchloride with glycerine answers admirably. If the photophobia be not troublesome some atropine drops (2 gr. to an ounce of water) may alone be used, and it is useful to bear in mind that their instillation should be continued until all injection of the globe has subsided. Afterwards some dilute yellow ointment may be placed in the conjunctival sac every night at bed-time as a stimulant to the processes of repair. In the majority of cases this treatment amply suffices to effect a cure. But it is useless to expect a goood result if the child be permitted to attend school. All school work should be interdicted until the eye has made a good recovery. An ulcer of the cornea may pass into a sloughing condition, and when this occurs the cause is due to pathogenic infection. One of the sources of such infection is stated—and repeated—in text-books to be chronic dacryocystitis; the condition, therefore, of the lacrymal passages should always be examined into in these cases. Sloughing ulcers are not infrequently seen during lactation in weakly young women, whose anæmic, underfed condition altogether unfits them for continuing the duties of nursing their offspring. In bad cases the ulcers may be multiple and both eyes may be involved, and inasmuch as the ulceration extends into the deeper layers of the cornea, perforation with prolapse of the iris may supervene and add still further to the seriousness of the destructive effects of the disease.

Coming to the question of treatment I have repeatedly found that sloughing ulcers of the cornea are best treated from the first with eserine. The strength of this drug which I use is half a grain to an ounce of sterilised water, and this I never exceed. With drops of such strength no irritation is caused, while the full benefit of the drug is obtained. Practically the effect of the drops can be regulated by the frequency of their instillation. Speaking generally, two instillations a day will be found to be sufficient, but if more are considered to be advisable these can be administered without fear of pain being induced. Again, heat in the form of hot fomentations is absolutely needful; nothing so effectually relieves the oftentimes acute pain accompanying these ulcers. The cornea likes warmth. A large pad of chinosol gauze dipped into boiling water and wrung dry should be placed over the lids of the affected eye, and the applications

continued for half an hour or more twice or thrice a day. A few words may now be said regarding hot fomentations. It should be remembered that belladonna in this form is best avoided. For example, belladonna fomentations are contra-indicated when the eye is under the influence of eserine, for the one drug would counteract or neutralise the effects of the other. Again, it is inexpedient to use belladonna when the eye is under the influence of atropine, for the combination of the two is apt to cause atropine irritation. Lastly, a fomentation is not usually intended for the application of a drug, but as a means for the employment of heat; hence if any drug be used it is best to employ some antiseptic, as chinosol, by which the conjunctival sac will be kept as far as possible in an aseptic condition and the repair of the ulcer more directly promoted. In addition to the local treatment the patient should have good food in abundance, as well as a preparation, say, of quinine and iron, while it is very needful to remember that in bad cases occurring in connection with lactation the weaning of the infant becomes an essential element of treatment.—*The Lancet, October* 22, 1898.

105.—SYMPATHETIC OPHTHALMITIS.

By G. A. Berry, M.B., F.R.C.S. Ed.,
Senior Ophthalmic Surgeon, Royal Infirmary, Edinburgh.

[The following is a portion of Mr. Berry's paper:]

Practically the facts to be kept in mind are—that sympathetic inflammation of the second eye only occurs where the first has been perforated by injury or disease, and that some time must elapse between this perforation and the beginning of symptoms of sympathetic inflammation. The indications for preventive treatment are therefore to remove or otherwise destroy the source from which the poison is distributed, and to do so within a limited time. Cases in which perforation is caused by injury, and particularly those in which the perforating body becomes lodged in the eye, present the greatest risk of exciting sympathetic mischief. It is generally asserted, too, that there are special risks in this respect connected with wounds of the eye which involve the ciliary body. I do not think that experience altogether warrants this belief. Wounds in this region are, on the whole, less liable to heal rapidly, and this circumstance, in the case of microbic infection at the time of injury, may possibly create a greater tendency to the conditions favouring the elaboration of the specific poison. Certainly there is no greater risk attaching to clean wounds in the ciliary region

than to similar wounds in other parts of the eye. The special risks are, then, wounds of the eye caused by bodies which are likely to have led to the introduction of micro-organisms. More especially, however, has the state of the eye which follows injuries of such a nature to be taken into consideration. The risk is greatest where it remains irritable and congested over an area which is often limited to that surrounding the site of an enclosed foreign body, or, in the absence of any foreign body, to the neighbourhood of the external wound. When this irritability is associated with marked tenderness on pressure, there is special cause for apprehension. In the risky cases, the irido-cyclitis which gives rise to these symptoms of irritation is more fibrino-plastic than purulent. Anything like a rapid purulent destruction of an eye following injury, or the perforation of a corneal ulcer, is not likely to be followed by sympathetic changes in the other eye. Either the specific toxins are then not formed, from the absence of the specific germs, or the preponderating and more rapid action of pus-forming organisms, or the channels by which these toxins reach to the other side are sealed and destroyed by the purulent process. Whatever the cause, the clinical fact should be remembered. But it must not be supposed that the mere presence of pus precludes the likelihood of sympathetic inflammation. It is only in the cases in which rapid and extensive purulent destruction results from an injury that this is so. A little hypopyon making its appearance slowly after injury is not only for the most part evidence of the introduction of microbes into the eye, but is a complication which is frequently met with in cases which are afterwards associated with sympathetic irido-cyclitis of the other eye.

With regard to prophylactic treatment by enucleation, clinical experience has afforded me the following indications by which I am guided in the meantime in my own practice. First, in all cases in which an eye, the coats of which have been perforated by injury or otherwise, is irretrievably blind, and at the same time congested, tender to touch, and of diminished tension, it should be enucleated. This rule should be absolute, and apply also to cases where sympathetic inflammation has already begun in the other eye. It should also apply to the case of a recently injured eye. If an injury has been so severe as not only to have destroyed vision at once, but to preclude any likelihood of a quiet healing, enucleation should be done early. In such cases evisceration may, too, where it is preferred, be substituted for the complete removal of the eye. Secondly, in cases in which the one eye is found to be sympathetically inflamed, and the exciting eye has retained some degree of vision, even if the amount retained be barely sufficient to enable the

patient to guide himself with difficulty, the exciting eye should not be enucleated, the sight which it has may be, and, indeed, most frequently turns out to be, all that the patient will eventually have to depend upon. Thirdly, if an injured eye has retained some degree of useful sight, it should only be excised for prophylactic reasons, if this be done some time within the first week of the injury. If, however, the sight remaining immediately after the injury be subsequently lost by inflammation, it should be excised, and the sooner the better. Such cases of injury by penetrating wounds, with or without the lodging of foreign bodies in the eye, in which all useful sight is not destroyed at the time, are of frequent occurrence. The question comes to be, then—Can one not adopt some measure, other than the removal of the eye, by which the risk of sympathetic inflammation can be lessened or removed? Of late years I have succeeded in a number of cases in checking the inflammation which has followed upon injuries of this kind, and thus attacked the source from which a transference to the sound eye takes place.

This treatment consists in injecting directly into the vitreous chamber a few drops, from 4 to 6 minims, of freshly prepared, fully saturated chlorine waters. This is the most powerful, and, at the same time, most diffusible, antiseptic. It does not coagulate the vitreous as other antiseptics do, it does not cause pain, and it does not destroy the sight. The introduction must be made through an opening in the sclera, which is considerably greater than the tube of the syringe. Unless a means of escape is provided for the displaced liquid, the injection of even a few drops would cause a serious rise in the intra-ocular tension. The chlorine injection may even be repeated if a recurrence of the inflammation should show itself after a temporary check. The injection is also a good adjunct to any treatment which may be required for removing a foreign body from the posterior section of the eye.

106.—THE EARLY RECOGNITION AND TREATMENT OF ACUTE INFLAMMATORY GLAUCOMA.

By Clarence A. Veasey, A.M., M.D., Adjunct Professor of Diseases of the Eye, Philadelphia Polyclinic, &c.

[The following is taken from Dr. Veasey's paper :]

The attack of acute inflammatory glaucoma usually presents a combination of symptoms so thoroughly characteristic of the affection that with the exception of a few extremely rare instances it should never be mistaken for any other disease.

Appearing as it does very frequently at night (and there seems to be a marked tendency to occur in the latter part of the night or early morning), there is ordinarily excruciating pain throughout the side of the head, which is sometimes accompanied by nausea and vomiting. The extremities may be cold, or there may be even flushing with slight fever. These symptoms are apt to cause the uninitiated to suspect some severe constitutional origin, but if the eyes be carefully inspected there will be found some swelling of the lids and some œdema of the subconjunctival tissue. The eyeball will be intensely injected, and the cornea will in most instances be hazy and partially anæsthetic. The appearance of the latter can be compared to a piece of cold glass, the surface of which has been breathed upon, and if its sensibility be tested by widely separating the lids and touching it with a wisp of absorbent cotton, it will be found that the impulse to close the lids that exists in normal eyes is entirely absent, or not so decided as usual, according to whether total or partial anæsthesia is present. The aqueous humour is more or less turbid, and the anterior chamber as a rule is much more shallow than normal. The pupil, which is one of the chief points of difference between this and certain other affections with which it is mostly confounded, is dilated either moderately or widely, and if it reacts at all does so extremely sluggishly. The iris is discoloured, and if the tension of the eyeball be tested by palpatation through the closed lids with the index-fingers of both hands, it is found to be elevated—that is, the eyeball is harder than its fellow, or if the latter be also affected, harder than an eye the tension of which is known to be normal. The patient's visual acuity is greatly reduced, oftentimes only the ability to distinguish between light and darkness remaining, and if an attempt be made to examine the interior of the eye with the ophthalmoscope it is found impossible to get any view of the fundus. If no treatment be instituted these symptoms may last from a few days to a few weeks, and when the eye recovers it is found that the visual field is somewhat contracted, the iris less mobile, central vision less acute, the optic nerve slightly cupped, and the tension more or less elevated. It is rare for a patient to become permanently blind in the first attack; but experience teaches that the attacks recur with increasing frequency, each one leaving the vision worse than before, until total blindness ensues, resulting in the condition known as *glaucoma absolutum*.

The treatment of acute inflammatory glaucoma is of two kinds, medicinal and surgical. The medicinal, if employed alone, is usually of temporary benefit only. Leeches applied to the temple and hot fomentations to the closed lids assist in reducing the inflammation and alleviating the pain, though if

the latter be very severe, hypodermic injections of morphine may be required. Rest in bed, if necessary, darkening of the room if there be much dread of light, and the use of smoked glasses when out of doors, are measures to be advised. The internal administration of salicylate of sodium in large doses also seems to be of benefit in some cases. The object of primary importance is of course to reduce the intra-ocular tension as rapidly as possible, and this may be attempted by medicinal or surgical measures. It seems to be good practice to instil into the eye a drop or two of the solution of eserine (about two grains to the ounce), or pilocarpine (about four grains to the ounce), every half hour for six or eight hours, using at the same time a 4 per cent. solution of cocaine to assist in relieving the pain and to render the iris more susceptible to the action of the myotics; and if at the end of this period the pupil remains dilated and the tension still above the normal, it is better to adopt some surgical intervention at once. If, on the other hand, the pupil responds to the action of the myotic and the tension becomes normal, it is not necessary to operate until the attack has subsided.

The operations that are performed for the reduction of intra-ocular tension are paracentesis of the anterior chamber, anterior sclerotomy, posterior sclerotomy, and iridectomy. The first of these is a temporary measure, but each of the last three has advocates who claim that it is curative. The writer is one of those who believe that a carefully performed broad peripheral iridectomy is the best of the measures in the majority of cases, and that it should be performed during the inflammatory stage if drugs fail to produce amelioration of the symptoms. If, however, the symptoms are improved by the use of the myotics, in conjunction with other medicinal measures, and the eye recovers from the attack, the operation should not be performed until the eye becomes entirely quiet. That it should be performed at this time, both as a preventive and curative measure, has been proved by thousands of cases.—*Therapeutic Gazette, August*, 1898.

107.—THE OPERATIVE TREATMENT OF LAMELLAR CATARACT.

By E. C. Fischer, late Senior House Surgeon; and
C. Devereux Marshall, Curator.

[From Messrs. Fischer and Marshall's paper:]

We may classify the operations done for lamellar cataracts into the following groups:—1 (*a*) Simple needling; (*b*) needling followed by curette evacuation; (*c*) needling followed by suction.

2 (*d*) Extraction. The first includes needling either alone or followed by evacuation, and the second includes those cases in which the lens is removed as completely as possible, as in the case of senile cataract, without a previous needling. All the cases in the first group have to run the risks which attend needling, and whatever is done subsequently cannot prevent these; indeed, many surgeons are by no means anxious to undertake a second operation on the eye of a child when the lens is undergoing gradual, if not rapid, absorption while the eye remains quiet and free from injection, even should the time be prolonged before the pupil becomes clear enough to render good vision possible by the aid of glasses. No operation can be regarded as absolutely free from danger, and it is often considered an unnecessary risk to run to undertake some further procedure when there is no urgent need for it. In these cases especially there is no great hurry. The patients, as a rule, are quite young; they frequently have sufficient vision with the other eye to meet their requirements, while a few months one way or the other makes not the least difference to them, a final good result being the one thing to be aimed at. Everyone of course is agreed that should there be anything like undue swelling of the lens leading to tension, or even to irritation which may produce tension, it is wise to evacuate the lens matter before this complication actually occurs; in other words, no good can possibly result by waiting till all the symptoms of acute glaucoma are present before giving relief by a further operation; but should the patient be under observation one may safely allow the broken-up lens matter to gradually absorb, if it will do so without causing either pain or irritation. That a simple needling operation on any eye is unattended by danger is a statement that can by no means be proved, and clinical experience is at direct variance to any such idea.

In the cases which form the basis of this paper there were 260 which were needled, or needled and evacuated, the exact numbers being:—Simple needlings, 123; needling, followed by curette evacuation, 113; needling, followed by suction, 24; total, 260. Of the simple needlings, eight eyes suppurated and five were excised. Of the needlings followed by curette evacuation, one eye was excised for slow suppurative iritis one month after the primary operation. Of the needlings followed by suction, one eye suppurated and was excised. This gives a total of 10 lost eyes in 260 cases, or a percentage of 3·84. Thus it is seen that needling in these cases yields a larger percentage of suppurations than needling after cataract extractions, which, as has previously been shown, equalled 1·02. It is well known that cases in which suction is performed are more liable to suppurate than when only a curette is used; but the operation

of suction is now but seldom done unless there is any great difficulty in removing the lens, and obviously the more instrumentation that is resorted to, the greater will be the risk of some complication happening. Suction is never needed if the lens is well broken up and disintegrated, as the result of the previous needling, for in such a case it would readily come away without such a powerful apparatus as a suction syringe; but, if it be not well disintegrated, it is better to leave it where it is rather than to use any forcible means for its evacuation. The cases, six in number, which were extracted without a previous needling are so few in number that it is hardly fair to make a comparison. If we take it that an eye was lost out of six, it gives the enormous percentage of 16·66, though the cases are far too few for this really to represent fairly the result. However, the operation is not one to be recommended in preference to the more usual methods. In all cases the greatest care is taken to prevent infection by means of the instruments which are used: they are all boiled, soaked in 1—20 carbolic, and are taken from a bath of 1—40 by the surgeon immediately before use.

In summarising the results of this important class of case it is obvious that we cannot always be certain of getting a good result, the danger of complications arising being considerably greater than in senile cataract. The best operation that we have at present is needling, followed, if necessary, by curette evacuation, which should always be done, if possible, before the onset of acute symptoms. It appears probable that iritis following these operations is usually of a septic nature, though the mere mechanical irritation of swollen lens matter may be sufficient to determine it. It is far better to freely open the capsule than to stir up the lens matter through a small opening in it; in the former case, should tension come on, the broken-up material can be readily let out, but in the latter case the greatest difficulty may be experienced before this can be done. Suction is not an operation which appears to be often required. It is more dangerous than curette evacuation, and probably in nearly all, if not in all cases, as much lens matter as it is possible to remove with safety can be got away without the aid of the syringe. It is running an unnecessary risk to use a complicated syringe, the nozzle of which is difficult to get thoroughly clean, when a simple curette will do quite as well. Great harm may result by prolonged attempts at the removal of small pieces of lens matter, which will themselves absorb without difficulty if left alone.—*Royal London Ophthalmic Reports.*

108.—TOBACCO INTOXICATION.

By Albert B. Hale, M.D., of Chicago.

I prefer to speak here only of the effect of tobacco upon the eyes, either as a local irritant to the conjunctiva or as a systemic poison causing amblyopia or a demonstrable optic neuritis. I can best illustrate both actions by reports of cases:—

J. G., 23 years old; for three years has complained of redness of the eyes, with watering and itching. No refractive errors. General health good. Is occupied eight hours a day as a cigarmaker. On close examination the odour of tobacco was evident, while the dust could be seen on his clothing and in his hair. The conjunctivæ were red and injected, and there was constant lacrimation, not causing decided epiphora, but enough to keep his eyes swimming in tears. I could not make a diagnosis of conjunctivitis, for there was no history leading to such an inflammation, nor were the physical signs present. It could be due to nothing but a constant irritation from the tobacco dust.

Such cases I can report by the dozen from dispensary and private practice, and my experience has been extensive enough to allow me to classify this as an "occupation disease." As to treatment I need say little. Cleanliness, correction of refractive error when present, good air, and repeated bland washings of the eye during the day is all that can be done unless the patient will find other work. The best results have come from washes of boric-acid solution, two per cent., or of ichthyol solution, two per cent., or salve, frequent repetition of the medicine being, in my opinion, as important as the selection of the drug. The pathology of this affection is simple. It is a continued local irritation by a foreign substance that produces and maintains an unhealthy hyperæmia in the conjunctiva. Quite different, however, is the pathology of that condition known as tobacco amblyopia, which, as far as it can be explained at all, is an optic neuritis of a rather unique type. On pathologic grounds alone I was at one time sceptical about the distinctness of a tobacco neuritis. Many men even to-day, in Germany and England, deny the occurrence of such a tobacco poisoning, and claim that there must always be alcohol associated with tobacco in order to cause neuritis. Thanks, however, to Wood, of Chicago, and De Schweinitz, of Philadelphia, we in America can avoid this error. The latest pathologic researches leave no doubt that tobacco neuritis is a true inflammatory process.

[The author then relates a case of tobacco amblyopia:]

Mr. W., aged 58 years, merchant, never smoked until he was 26, when he took to Egyptian cigarettes. He persisted in the use of these for six years, smoking about ten a day. After an illness of some weeks he discovered a dislike for tobacco and ceased smoking for five years. He then began on cigars, and smoked for five years. Then he stopped for six years—to 1887. Since this time, for the last ten years, he has smoked

constantly—cigars—and of late has used any brand handy, smoking all day. He never touched a drop of distilled liquor in his life. In Germany, twenty-five years ago, he tried light wines, but could never acquire a taste for them. He has ordered a glass of beer every few months for company's sake, but could not drink it. In all respects he is a very healthy man, free from bad habits, and active in every out-of-door sport. He has always worn glasses, being slightly near-sighted. In May, 1897, his sight began to fail; he first noticed that he could not see well at a distance even with his glasses, and that he was criticised for neglecting his acquaintances on the street. He remarked that when he got close to a person and tried to look directly at a face it seemed dim and cloudy. In October, 1897, I first saw him professionally, and his great complaint was that he could not see to shoot birds! His business he had given up for some time. The examination resulted as follows:—Vision, right eye, 6/36; left eye, 6/18; no improvement by any lens. No astigmatism by ophthalmometer. Pupils, $1\frac{1}{2}$ mm., and iris refused to react to light or accommodation. To see the fundus I was obliged to dilate the pupil with scopalein, and I then saw that lens and retina were normal, the only possible disturbance being a cloudiness of one-third of the edge of the optic disc.

Here, then, are the classical signs:—(1) Contracted pupil; (2) reduced vision; (3) clouded disc; (4) central scotomata for vision and colours. I at once stopped the tobacco, but made no other change. Strychnine, beginning at $\frac{1}{30}$ of a grain hypodermically, was given once a day, increasing daily by $\frac{1}{100}$ of a grain until $\frac{1}{3}$ of a grain a day was reached (even this produced no physiologic effects). On this dose he was kept for five weeks. Improvement began at once on cessation of the tobacco. On November 3, vision (with both eyes, and with a correcting sphere of—0·75D.) was 6/15; on November 10, 6/9; on November 26, 6/8; on December 21, 6/5, and from this time on he could read and write continuously and with comfort. Since then he has retained perfect vision, can attend to his business, and can see to shoot ducks better than ever. The strychnine was stopped long ago and smoking not recommenced. I am convinced that this was a pure tobacco amblyopia—a toxic tobacco optic neuritis, and nothing will ever shake my conviction. —*Medical News, September* 3, 1898.

109.—ON THE PREVENTION OF PYÆMIC COMPLICATIONS FROM ACUTE OTITIS MEDIA.

By B. F. Church, M.D., Los Angeles, Cal.

In the management of these cases it is our desire, first, to prevent pyæmic extension to the meninges, lateral sinus, labyrinth or mastoid cells. Second, to obviate the very frequent and extremely dangerous condition to hearing and life, chronic

suppurative otitis media. Statistics, it is true, show a small number of deaths to the whole number of middle-ear diseases, at the same time we should not under-estimate the seriousness of the complicated cases or lose sight of those that insidiously extend to vital parts. It is highly probable that in every case of acute otitis media the mastoid antrum is involved to some degree in the same inflammatory process, but, as Burnett says:—"It, like the acute inflammation in the tympanic cavity, will get well if not secondarily infected from without by improper treatment. Hence, the prevention of mastoid disease, in cases of acute otitis media, resolves itself into the prevention of secondary infection of the acutely inflamed middle ear."

We would class all cases of acute middle-ear inflammation under the head of infected and non-infected. Assuming the drum membrane to be intact at the onset of the disease, all infected cases come from the emigration of pathogenic germs—streptococci—from the naso-pharynx or other extraneous matter deposited there by forcible inflation. Those not so irrationally treated, excluding those from exanthemata, recover by resolution. As nature is potent to prevent infection when let alone, so is she capable, by a little assistance, of making repairs after infection when not prevented from doing so by over treatment. An enormous secretion is poured out in the tympanic cavity which ruptures the drum and, by a syphonic action, empties the tympanum and mastoid antrum through the external auditory canal. Unfortunately the resistance of the drum to the exit of the invaders is sometimes greater than the frail barriers to the vital parts, which lie so dangerously near, when one or more gives way, permitting the extension of the disease to the labyrinth, brain, or large blood channels.

Paracentesis of the drum membrane is imperatively demanded in all cases of acute middle-ear disease where the pain is not relieved in a few hours by application of heat or local blood letting, especially if the drum is seen to bulge at any part by the pressure of fluids from within the tympanum. The incision, as a rule, should be made in the posterior part of the membrane, preferably under an anæsthetic, and large enough to insure perfect drainage. Politzeration and all other forms of inflation must be strenuously avoided during the active stage of the inflammation, as such a procedure is not only painful and injurious to the inflamed and highly sensitive surfaces against which the air is forced, but there is danger and great probability of infecting the other ear. After freely incising the drum membrane, a strip of antiseptic gauze, one-quarter of an inch wide and one and a half inches long, should be inserted into the ear, reinforced by a small fold of the same material in the concha, and the ear let severely alone for twenty-four hours,

when the same dressing should be repeated without the aid of syringe or douche. If the discharge is very profuse the dressing may be changed more often. Extreme and persistent pain in the ear is evidence of pressure, and its presence after paracentesis of the drum membrane indicates that the opening is blocked when it should be enlarged. The external auditory canal, being a habitude of staphylococci, moist heat, in the form of germicidal solutions, may be used as hot as can be borne for the relief of pain. Frequently, however, the drum is too sensitive to bear the weight of the column of water, when dry, heat should be used, care being observed in either event to render the external auditory canal aseptic before the drum is perforated. Immediately after the drum is opened, whether a discharge has set in or not, antiseptic gauze should be introduced loosely into the canal as a barrier to micro-organisms and to encourage the flow. The swelling which takes place in the Eustachian tube during the active inflammatory stage of otitis media closes that channel of entrance of air to the tympanic cavity, provided, however, force is not used. By sterilising the external auditory canal, incising the drum membrane when there is pressure, and loosely filling the canal with antiseptic gauze which will filter the air that enters, and offers no resistance, but aids the outflow of pent-up exudates, we emulate and assist nature in the highest degree to relieve the sufferer of a most dangerous affection. On account of the anatomical arrangement of the parts, the most serious form of all middle-ear inflammations are those in which the disease is localised in the attic or upper portion of the tympanum.

As pain is in proportion to the pressure of retained inflammatory products, extreme pain is always a prominent subjective symptom of this affection. Positive diagnosis is made when the membrana flaccida and derma at the upper posterior extremity of the auditory canal, either one or both, are seen to pout. Both will be reddened and sometimes bulged out sufficiently to touch the floor of the auditory canal, obstructing the drumhead from view. This condition is frequently mistaken for a polypus. The treatment is early free incision and drainage. The method of incision as performed by Dr. Tansley, in his own words, is as follows:—"At the earliest possible moment, as soon as the diagnosis is made, and that is when an inflammation is seen in the superior or supero-posterior part of the drumhead passing upwards from the short process, make a liberal opening in these parts." A broad, strong and of course sharp Graefe's cataract knife is held strongly between the finger and thumb, with cutting edge directed upwards, the point of which is caused to pierce the flaccid membrane no lower than the short process, and in the centre of the greatest inflammation. It is passed

rather deeply, or until bone is struck, then a strong liberal cut is made upwards or upward and backwards, dividing the tissues for one-half or three-quarters of an inch. I do not think that I have ever made this cut in a case which had been existing for a day or two in which my knife did not pass over rough and denuded bone at the inner and superior lip of the bony canal. The external canal is at once filled with a plug of absorbent cotton and no syringing or douching is permitted. If necessary, a second or even a third cut may be made, if tissues are not thought to be thoroughly divided. Where these cases are seen before pus is formed, it is advisable to thoroughly disinfect the canal before making the incision.

In a few cases where the pain has persisted, I have found it necessary to incise the parts again upon the second or third day, but usually the cases immediately improve and the whole inflammatory process passes away in a few days. In many of my cases, where there has been tenderness upon percussion over the mastoid this cut has been sufficient to relieve the symptoms entirely, but usually if the mastoid cells are implicated it will be necessary to subsequently operate upon the mastoid. But what I want to call the attention to chiefly is the importance of early recognition of these cases and an early incision, and by doing so you will find that mastoid cases and operations and cerebral cases will be materially less.—*Laryngoscope, August*, 1898.

110.—ANTRECTOMY AS A MEANS OF TREATMENT IN SUPPURATIVE MIDDLE-EAR DISEASE.

By W. Milligan, M.D.,
Honorary Surgeon to the Manchester Ear Hospital.

[From an abstract of Dr. Milligan's paper in the *British Medical Journal*, October 22, 1898.]

My contention is that in cases where suppuration has persisted for twelve months, and where for at least three months careful and rational local treatment has been tried but without avail, the mastoid antrum and contiguous mastoid cells should be opened and cleared out, the precise form of the operation, whether a Schwartze, a Stacke, or a modified Stacke being determined by the peculiarity of each individual case. With proper precautions and with suitable instruments and means of illumination the mastoid operation, as at present performed, is, I believe, a safe procedure, and its results in the great majority of cases eminently satisfactory. In cases proved to be of tuberculous origin, cases which have run an asthenic and almost

chronic course from the commencement—early opening and drainage should, I believe, at once be resorted to without attempting any prolonged course of local treatment, for even if it has the effect of temporarily arresting purulency an early recurrence may safely be predicted. When cholesteatomatous masses occupy the attic and antrum I am strongly in favour of early and radical operation, and the maintenance of a permanent mastoid fistula. Even should the mastoid operation not have the effect of producing a permanently dry and cicatricial lining to the newly-formed antro-tympanic cavity, I believe that the patient is in a very much safer condition than before operation, owing to the fact that all loculi and foci in which germ-teeming pus may collect are done away with, and parts which previously were concealed and difficult of access are now thoroughly exposed and capable of being accurately treated by local applications.

To illustrate the above remarks I have carefully analysed the notes of 150 of my mastoid operations, and have divided the cases into three classes—acute, subacute, and chronic—according to the previous duration of disease and intensity of symptoms. Of the 150 cases, 10, or 6⅔ per cent., were acute, and presented the ordinary symptoms of a rapid course—high fever, quick pulse, severe mastoid pain, and ordinary objective evidences of acute suppurative middle-ear catarrh. In all —after a short preliminary trial of local treatment—local depletion, enlargement of the existing perforation, &c., the mastoid antrum was opened and drained, any adjacent mastoid cells which were implicated being freely opened up and cleansed. The result in all was eminently satisfactory, rapid healing taking place, with recovery of hearing power. Of the 150 cases, 10, or 6⅔ per cent., were subacute, had lasted for periods varying from two to three months, and were characterised by a copious discharge, progressive loss of hearing power, but by an absence of any degree of local pain, and had been subjected to the ordinary methods of local treatment from an early stage of the disease. After free opening of the antrum and contiguous mastoid cells, 9 entirely recovered, the hearing power returning to practically the normal amount, and 1 was lost sight of. Of the 150 cases, 102, or 68 per cent., were genuinely chronic, and had lasted for very varying periods. In all (except the tuberculous cases and cases with cholesteatomata) persistent and careful local treatment had been tried for periods varying from twelve to twenty-four months, but without avail.

In 78, Stacke's modified mastoid operation was performed with the following results:—In 65 a complete recovery took place, by which I mean that all suppuration completely ceased, and the newly-formed antro-tympanic cavity became nicely

papered with an epidermal covering. One died and 12 were lost sight of or are still under treatment. In 72 the ordinary Schwartze operation was performed. Of these, 47 recovered, 8 died, and 17 were either lost sight of or are still under treatment. Of the 150 cases, 18, or 12 per cent., were of tuberculous origin, and were submitted at once to operation. Nine of the cases recovered and 6 died, the cause of death in 3 cases being meningitis, in 1 tuberculous enteritis, and in 2 general marasmus. In three cases the subsequent history is unknown. Of the 150 cases, 10, or 6⅔ per cent., were implicated with the presence of cholesteatomatous masses, and were submitted to early and radical operation. Of these 10 cases, 10 recovered, in five a permanent mastoid fistula being established, in one the cavity being allowed to granulate from the bottom, while in four Stacke's operation was performed.

With regard to the subsequent hearing power of those patients who had been operated on for chronic mastoid disease, I have no very accurate notes. My general impression is, however, that in the majority of cases the hearing power was after operation very much what it was before operation, in a few it was made worse, and in a small number of the cases the hearing power for conversation was somewhat improved.

AFFECTIONS OF THE SKIN, &c.

111.—THE THERAPEUTICS OF DISEASES OF THE SKIN.

By H. Radcliffe-Crocker, M.D., London.

The only sound foundation for building up a reliable superstructure in therapeutics depends on our improved knowledge of the pathology of the skin affections which we have to treat, and in no part of the body can we study the pathology of disease so advantageously as on and in the skin. Let us look back a little and count some of the therapeutic gains which the new pathology has brought in its train. Let us take, as an example, such a thing as a common boil. It is not very long ago when the pathology of a boil was a complete mystery. When the dicovery came that boils were due to the introduction of the almost ubiquitous staphylococcus aureus and its brethren albus and citreus into the follicles of the skin, then not only did what was a mystery in its etiology before now become clear, but the path to treatment was distinctly pointed out, and we now know that the persistent local disinfection of each boil, either before or after suppuration, is not only the best for the boil

then present, but if carried out on each fresh boil as soon as it appears will, before long, exhaust the supply of the pus cocci and lead to the cure of cases which had previously defied treatment for weeks, months, or even years. What is true of boils is true of all the skin diseases due to this same organism, carbuncles, impetigo contagiosa, and its variant ecthyma, coccogenic sycosis and some other forms of folliculitis, pemphigus neonatorum, the purulent complications of ordinary eczema and of some other less defined suppurative diseases of the skin, all yield, and that speedily, to the destruction of the organism which produces diseases so morphologically dissimilar.

This direct destruction of the morbific agent is, however, only one method of preventing the malign influence of micro-organisms. Whenever the surface of the skin is disturbed by inflammatory or other lesions it is liable to be invaded either from without by various cocci or bacteria or from the skin itself. One of the most serious examples of secondary invasion of the skin by micro-organisms from without is the multiple gangrene of children, which is liable to follow varicella, vaccinia, and other vesiculo-pustular eruptions of infancy. The destruction and control of the gangrene exciters can often be successfully obtained by measures similar to those used for carbuncle, although we are not certain that the organism is the bacillus pyocyaneus, or some other equally dangerous. The recognition of this secondary invasion is of special importance in the treatment of chronic eczema, and explains the *modus operandi* of the tar-baths first put forward by Hebra, which yield such remarkably good results in cases of long standing when used with intelligence and discretion ; but I must pass on to consider some points of the internal therapeutics of diseases of the skin.

There are certain conditions which undoubtedly favour the development of recognised microbic diseases, and which must be taken into account in our treatment of these diseases. Thus diabetes mellitus is a well-known predisposing cause of boils, carbuncles, and abscesses ; and gout, while its influence in predisposing to various forms of dermatitis has been greatly exaggerated, is by no means to be despised as an etiological factor, and even in such a disease as syphilis dormant tertiary symptoms are often awakened by a gouty state.

The great success attending upon a more intelligent local treatment, which began when Hebra's strong hand swept away the cobwebs of the old theories, led to such a reaction that the German school and its followers in other countries practically abandoned internal treatment except as regards arsenic, and to them the skin was an organ separate from the rest of the body as far as practical therapeutics were concerned. To the extreme

localists the effect of an animal extract, like that of the thyroid gland on the skin, must, to the more thinking minds, have come as a shock as well as a surprise. Although, no doubt, it has disappointed the too sanguine expectation of some of the enthusiastic early workers with it for some diseases, yet there is a good, solid residuum, viz., that here is a substance which undoubtedly exercises a marked effect upon the nutrition of the skin as well as other tissues in certain morbid states, and it is only reasonable to infer that thyroid extract does not stand alone in this respect, not only as regards those found in the animal, but probably in the vegetable and mineral kingdom also, and is it not our duty and our interest to try to find them?

We have seen, very briefly, how much good was obtained by antisepsis, either by a scientific application of microbicides to skin lesions, or by excluding morbific microbes, or by putting the skin into a position to resist their attacks. Cannot similar effects be obtained on similar principles by internal remedies? No doubt the difficulties are greater and the results often less immediately obvious, yet there are facts to encourage us, and which show that something has already been done in this direction, and much more may be done. Surely the intramuscular and intravenous injection of mercury and its salts for syphilis is not uninstructive in this direction. No doubt the peculiarities of practice, especially of private practice, in this country, offer difficulties which are little felt on the Continent, where they are so extensively used, and no doubt there are certain inherent drawbacks to both methods, such as the painfulness of the intramuscular injections and occasional dangerous salivation, and the frequent occurrence of thrombosis from intravenous introduction of the drug. But at least they show this, that a serious disease like syphilis may be successfully combated by this method, and often more readily than by any other; moreover, recent observation has shown that syphilis is not the only disease which may be favourably influenced by these methods. Leprosy, psoriasis, some forms of lupus, &c., may also be favourably modified, or even sometimes removed by them. Not only mercurial salts, but other drugs or substances may yet be found, and should certainly be looked for, which will produce as good or better results, and who that has seen the effect of carbolic acid injected subcutaneously round a carbuncle can doubt that such a search will certainly be crowned by success?

And yet another direction in which we may search on well-grounded hope. There are a few diseases of the skin which we know are due to a bacillus or coccus circulating in the blood or deposited in the tissues; for example, leprosy, tuberculosis, and glanders. Can we in any way get at them by internal remedies?

Surely we can sometimes do so by giving drugs which we know break up in the circulation and set free substances which have a microbicide action. Our task would be easier, but that we must take very good care that we do not liberate a too potent agent which we cannot control, and which may damage the host as well as its parasite; but already we know of a few such substances, and further research will no doubt bring others to light. I will mention now only salicine, which sets free salicylic acid in the circulation, and ichthyol, which sets free sulphur, and the last-mentioned substance furnishes another example of a sterilisation of skin products from within. Thin has shown that that revolting affection, bromidrosis of the feet, was due, not to the secretion of foul sweat, but to the decomposition of the sweat after excretion by the bacterium fœtidum, and that local antiseptics, such as boric acid, would prevent this decomposition; it does not, however, prevent the excessive secretion. Now, it has long been known that sulphur internally both prevents the smell and diminishes the excess. Knowing, as we do, that sulphur is eliminated by the skin when taken internally, it is no great step to infer that it practically sterilises the sweat by preventing the growth of the bacterium fœtidum after the excretion of the fluid.

In addition to animal extracts and drugs, another door is opening to us in the shape of toxin serums. It is true that tuberculin and Coley's fluid have disappointed us so far; but, temporary as the limited success of tuberculin has been, it is enough to show that further enlightened research may discover some toxin with more permanent beneficial action in some diseases other than those due to tubercle. The effect of erysipelas on some diseases of the skin is very encouraging in this direction. In lupus vulgaris or erythematosus the effect of an attack of erysipelas is often most striking. I have seen large areas clear up under its influence, leaving a healthy, thin, and pliable cicatrix. The same is true in tertiary syphilis, most obstinate gummatous and other lesions are cleared off in the most marvellous way by erysipelas; and last, not least, the only exception to the uniformly fatal result in that formidable disease, mycosis fungoides, is a case which recovered permanently after an attack of erysipelas. I have myself known of one case in which an attack of double pneumonia, with a high temperature, cleared off nearly all the lesions of mycosis fungoides for a long time, but what we require is more control over the action of erysipelas toxin, lest we raise a spirit which we cannot lay when he has done our bidding, and it is not too much to hope that bacteriologists will give us such a controllable serum before long if we ask it of them.—*British Journal of Dermatology, July*, 1898.

112.—ARSENIC IN SKIN DISEASES.

By Malcolm Morris, F.R.C.S. Edin.

The notion that arsenic is a panacea in skin diseases is simply a mischievous superstition. It is a most valuable remedy if properly used, but in many skin affections it is useless, while in some it does harm and may even be dangerous. Let us consider what experience teaches as to the internal use of arsenic in skin diseases. First of all, let me state as a cardinal rule of practice that arsenic should never be given in acute conditions; it only serves to fan inflammation to a fiercer glow. This general principle applies to all forms of skin disease. It is in chronic conditions alone that the "alterative" properties of the drug find a proper field for their activity. Another rule in the administration of arsenic is that it should be given in very small doses at first. The practitioner will do well to feel his way cautiously with the drug, increasing the dose gradually according to the tolerance displayed by the patient. During a course of arsenical treatment the patient should always be kept under close observation, and the drug should be discontinued as soon as any constitutional symptom referable to its use—such as coryza, redness of the eyelids, conjunctival injection, gastric or intestinal irritation—is observed. A better effect is often obtained by discontinuing the administration of arsenic for a short period from time to time, thus, as it were, "breaking the habit" that might be induced by too continuous use.

Another point which should never be lost sight of is that arsenical medication, if too long persevered with, may produce effects as troublesome as, or even worse than, the disease which it is intended to cure. The prolonged administration of the drug, or its use in excessive doses, is likely to produce deep brown pigmentation of the skin and thickening of the epidermis of the soles and palms. Not long ago I showed at the Dermatological Society a woman who had been treated for lupus erythematosus with arsenic; the drug had been pushed till all trace of the disease had disappeared. The arsenic had, so to speak, swept the skin clean of the original affection, but, in place of it, had brought chronic changes of a different kind, pigmentation extending over the whole of the body, keratosis of the palms, and loss of hair. Hutchinson has described corn-like growths, sometimes assuming a malignant form, which he considers to be the result of a prolonged course of arsenic. Peripheral neuritis is another well-known consequence of over-drugging with arsenic. Apart from such consequences of the abuse of arsenic, it must not be forgotten that the possible influence of idiosyncrasy must be reckoned with. In certain persons arsenic, even if given with all proper precautions,

produces eruptions of various types — papular, vesicular, urticarial, pustular; sometimes even boils and carbuncles.

Lastly, a word should be said as to the form in which the drug is best administered. For most purposes Fowler's solution is the most convenient preparation. It is, unquestionable, however, that better effects are often obtained by the administration of arsenical waters, such as La Bourboule and Levico, than by solutions of arsenious acid. The good effect of these waters is due to the relatively small amount of arsenic which they contain; small doses of the drug can thus be given for a long time without producing any toxic symptoms. Arsenical waters taken internally, however, do not protect against relapse so effectually as when administered in the form of baths. The good effect in the latter case is due not so much to absorption of the drug as to its action on the nervous system through the cutaneous nerves. Some American dermatologists, however, prefer arsenious acid or arseniate of soda, and recommend that the remedy should be given after, not during, meals. In France the usual plan is to give Fowler's solution (from 2 to 10 or 15 drops in the day) or arseniate of soda in granules of 1 milligramme, or in solution in such a way that 2 to 10, or even 20, milligrammes are taken in the day. (From Mr. Morris's address on "The Use and Abuse of Internal Remedies in Skin Diseases," presented to the annual meeting of the Reading Pathological Society, 1898.)—*British Medical Journal, October* 15, 1898.

113.—ECZEMA.

By Dr. Wallace Beatty.

From a clinical standpoint, eczema is generally attended in some part of its course by a visible serous, or sero-fibrinous sticky exudation, which often forms at first transitory, small, closely-set vesicles whose roofs rupture early, and thus a reddened moist sticky surface remains. The vesicular character of the disease is often only recognised by the presence of minute, circular, closely-set, sero-fibrinous crusts. If we are to look upon the occurrence of this visible exudation as an essential feature of eczema, we must exclude all cases which develop and disappear without showing any trace of moisture, and, in all dry cases which come before us, before our diagnosis can be made, we must either obtain a clear history of exudation in the past, or we must wait for future manifestations of exudation, and so defer our diagnosis indefinitely. The characteristic exudation of eczema is admittedly serous or sero-fibrinous and sticky; this being so, can a pustular eczema exist? Should we not rather look upon the presence of pustules in eczema as a complication

and not a part of it, and due probably to the accidental entrance of pyogenic organisms? Whatever the cause of eczema may be, we all admit that its natural tendency is to produce a serous or sero-fibrinous sticky exudation, with but few leucocytes, and it seems hard to believe that the same cause could produce, under any circumstances, an exudation so totally different. On the other hand, the character of the pustules which are seen from time to time in genuine eczema—viz., very small, closely set, and short-lived, give some ground for regarding them as something peculiar to the disease.

If visible exudation is not necessarily present in all cases of eczema, and if it only occurs in cases of some severity, we may consider whether changes in the epidermic layers of an inflammatory nature, and produced by the effect of a minute amount of exudation upon the epithelial cells, are a constant feature of the disease; and we find that in most cases a change, which manifests itself superficially by more or less reddened scaly patches, is present. In the early stage of erythematous eczema of the face we find this scaling absent, but when the redness and swelling which accompany this form lessen desquamation follows. We may accordingly regard the clinical sign of eczema as an alteration in the epidermic layers, inflammatory in nature, producing more or less scaling.

But now we must ask how are we to distinguish some cases of dry scaly eczema from psoriasis? The characteristic features of psoriasis are the presence of red circular spots covered with more or less abundant silvery scales, on the removal of which by scratching bleeding points appear. There is a form of eczema, Dr. Unna's psoriasiform seborrhœic eczema, which, in its objective character, resembles closely psoriasis. How is the differential diagnosis made? Localisation comes to our aid. The presence of psoriasis on the bend of the elbows and below the knees at the commencement, of psoriasiform seborrhœic eczema on the scalp first and thence spreading downwards, are distinguishing characters. At the same time one meets with psoriasis-like eruptions occurring on parts favoured by true psoriasis, and, as well, on parts specially attacked by seborrhœic eczema; and as the appearance of the eruptions is indentical, we are at a loss to decide whether the case before us is all seborrhœic eczema, all psoriasis, or a combined seborrhœic eczema and psoriasis. There is an immense difficulty in deciding upon the nature of some of the squamous cases we meet with. In calling to our aid locality in the diagnosis of eczema, we find that the different accepted forms of eczema affect different localities. Thus, while eczema is in general prone to attack the flexor aspects, especially of the joints and the junction of skin and mucous membrane, yet there are forms which mainly avoid

these places and attack the extensor aspect rather more than the flexor,—viz.: so-called "nervous eczema" and Mr. Morris's "eczema folliculorum," so, speaking generally, locality is not a certain help in the diagnosis of eczema. An alteration in the epidermic layers, manifesting itself by scaling, is the most constant of all the objective signs of eczema, but we must except acute vesicular eczema, which runs an acute course, and may heal quickly without being followed by scaling.

Itching.—In the diagnosis of eczema the subjective symptom of itching comes to our aid. This symptom is commonly present, but are we to exclude eczema when it is absent? The degree in which itching is felt depends not only upon the form of the eczema, but upon individual peculiarities. The contrast between the intense itching so commonly experienced in eczema, and the burning sensations experienced in psoriasis, is worthy of note, but cannot be too closely relied upon. Occasionally, pain rather than itching is felt in very acute eczema—*e.g.*, eczema of genital region—acute vesicular eczema. If the three clinical symptoms, serous or sero-fibrinous sticky exudation, scaling, and itching are present in most eczemas, are we to exclude any eruption in which neither visible exudation nor scaling is present? Where are we to place an acute more or less general eruption, characterised by the presence of minute, red, intensely itchy papules, having their seat at the hair-follicles, the papules either scattered or in small groups; an eruption which, formerly called Lichen simplex, is now usually described in dermatological writings under the head of papular eczema?

An important characteristic of most eczemas is chronicity and variability in its external manifestations; eczema tends, when untreated, to last an indefinite time; dry patches become moist, moist patches become dry and scaly again and again in the course of the affection. These two characteristics are, however, wanting in acute vesicular eczema, and in acute papular eczema above alluded to. (From Dr. Beatty's paper in the discussion at the British Medical Association Meeting, 1898).—*British Journal of Dermatology, October*, 1898.

114.—THE SYMPTOMS AND TREATMENT OF ZOSTER.

By Ellice Alger, M.D., of New York,
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[Taken from Dr. Alger's paper.]

The outbreak of the disease is often preceded by several days of vague malaise, possibly by chills and some fever, and frequently by neuralgic pains of varying severity. Then come

localised areas of superficial redness over the trunk of a nerve or nerves, which become slightly papular, and in a few hours present the typical appearance of the disease by developing vesicles, which are generally of small size. Each blister is surrounded by a narrow halo of inflammatory redness, and the whole number of lesions are grouped together, often in patches, perfectly healthy skin intervening between the vesicles. Sometimes several small vesicles merge in one larger, so that the lesions are of varying size. Unless very large, they show no tendency to break down spontaneously, but after a few days the contents, becoming more turbid, is absorbed or dries down as a brown crust which finally falls off without leaving a scar. Several crops of these vesicles may appear and undergo involution during an attack, each crop lasting from three to seven days, and often being preceded by an accession of neuralgic pains. When the disease appears at its commonest site over the intercostal nerves it is very unusual to find patches in the midline of the body, either before or behind, but they are especially prone to appear at the sides, while pressure over the nerve at its point of exit or in any part of its course is productive of very sharp pain. Very unusually there may be a bilateral appearance of the lesions almost meeting in front. The disease may occur at any time of life and in either sex. It is said to be more frequent in children than adults, but this probably depends largely on the practice of the observer. It has happened in my experience that by far the larger proportion of cases occur in adults past middle age, many of whom came not so much from any disquietude about the eruption, but for relief from the persistent neuralgia. Young adults and children, as a rule, suffer very little pain from this cause, and I can readily see that many would not call a physician at all unless the area involved was quite large. The disease may occur on almost any part of the body, the intercostal variety being by far the most common. The next most common site is the region supplied by the lumbo-abdominal branches of the spinal cord, and less frequently still the genitocrural branches are involved. The fifth nerve may be affected, involving one side of the forehead and nose, and occasionally presenting a few vesicles on the eyeball itself I remember one such case in which a permanent opacity was left in one eye by faulty treatment following a mistaken diagnosis. The lesions may appear on the limbs, generally above the elbow and knee, but not necessarily so. In a great many cases there is pronounced anæsthesia of the cutaneous areas over the affected nerve as compared with the opposite side. Sometimes there is a hyperæsthesia instead, and either condition may persist for some time after the original lesions have disappeared.

The prognosis in almost all these cases is good, both as regards life and maintenance of function, but in old and cachectic subjects the duration is longer, the pain greater, and there is a tendency for the lesions to become infected and to ulcerate, leaving scars which we do not expect to occur in the more vigorous subjects. In a young and healthy subject I do not think the disease requires any treatment except a local protective to prevent the blisters from breaking and becoming infected. The usual method is to cover them freely with a dusting powder and a layer of absorbent cotton and a bandage. Personally, I prefer to treat them as I do burns of the second degree. The blisters are simply laid open with a sterile instrument, no attempt being made to remove the contents, and then the whole region is sopped with the following :—Picric acid, ℥ iss ; citric acid, ℥ iii ; distilled water, ℥ ii. The application smarts a trifle at first, but is eventually soothing, and after it is dry it does not interfere with the local application for relief of the pain as do the various ointments and powders; it also hastens cornification and cuts short the crops of vesicles. It would be inadvisable to use it on the face because of the temporary but pronounced yellow stain.

For the relief of the pain there is nothing to be compared to galvanism, the positive pole being applied over the nerve-root and the negative moved slowly over the skin toward the distal extremity or about the patches. The strength of the current depends entirely upon the size of the electrodes. Of the drugs which control pain the number is very great, but I think phenacetin, in doses of five grains every three or four hours, is the most satisfactory, better than morphia, it seems to me, in pain of this character. However, it must be borne in mind that all the coal-tar products may be depressing to certain subjects, the old and cachectic for instance, and in these the general condition often calls for treatment aside from the local one.—*Medical News, August* 27, 1898.

115.—THE DIAGNOSIS OF CUTANEOUS SYPHILIDES.

By C. F. Marshall, M.D., F.R.C.S.,
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[From Dr. Marshall's paper :]

The main characteristics of cutaneous secondary syphilides, according to the text-books, are :—(1)*Polymorphism.*—This holds good in the large majority of cases, so much so that it is often unwise to make a diagnosis of syphilis in the absence of other

syphilitic lesions, if only one type of skin affection is present. (2) *Pigmentation.*—This is also usually characteristic, the colour varying from that of raw ham to a copper colour. However, by no means all syphilides become pigmented in this way. (3) *Absence of Itching.*—This, although common, is not a universal characteristic. Many syphilides, especially late secondary ones, are accompanied by more or less itching or burning sensations. No doubt this depends to a great extent on the degree of sensitiveness of the skin of the affected person. (4) *Distribution.*—Secondary syphilides have a tendency to symmetrical distribution. This is especially the case in the earlier eruptions, but the later secondary lesions are much more irregular in distribution. Tertiary ulcerations are also sometimes symmetrical, but much less so than secondary syphilides. The statement that secondary lesions nearly always affect the flexor surfaces of the limbs is incorrect; the extensor surfaces are affected nearly as often as the flexor.

Let us now take the main types of skin lesions and compare the syphilitic with the non-syphilitic. *Erythematous Syphilide.*—The earliest affection of the skin in secondary syphilis is an erythema or roseola, which varies from a faint mottling of the skin to more or less discrete rose-coloured spots. This first appears on the loins, chest, thighs, and abdomen, and soon changes in colour to a grayish-brown. It is often so faint as to escape notice unless carefully looked for. The diagnosis is seldom difficult. *Macular Syphilide.*—This usually forms a connecting link between the roseola and the later secondary eruptions, such as the papular and squamous, with which they are usually mixed. The spots vary much in size and colour, changing from reddish-brown to ham-colour or to grayish-brown. *Papular Syphilide.*—The papular syphilide is usually mixed with the squamous, forming the common papulo-squamous syphilide. That is to say, the spots vary from slightly elevated papules to distinctly squamous spots, which in their full development form the so-called "syphilitic psoriasis." Under this group come the "lichenoid" and "miliary" syphilides, resembling lichen and miliaria respectively. Diagnosis.—This depends on the mixed nature of the eruption, the colour, and distribution, and the presence of other syphilitic lesions. Apart from these, a pure papular eruption should not, as a rule, be diagnosed as syphilitic. *Squamous Syphilide.*—As stated above, this usually occurs mixed with the papular syphilide; but sometimes the whole eruption is more or less squamous. *Carcinate or Annular Syphilide.*—This forms a variety of the squamous form, and occurs as a late secondary phenomenon. It occurs most frequently on the trunk and face, where it forms one of the commonest kinds of the so-called "corona veneris" at

the junction of the forehead and scalp. Diagnosis.—This form of syphilide is often difficult to diagnose apart from confirmatory evidence. The text-books do not give sufficient importance to its resemblance to tinea circinata. Many cases of late secondary syphilis, both under treatment or without, develop a circinate eruption at first sight resembling tinea circinata. The main differences are the colour of the syphilide, which, however, is often not typical, and the clear centre with spreading edge which is more characteristic of tinea. It is also difficult to diagnose from eczema palmaris when it occurs on the palm of the hand, but differs from this by commencing in the centre of the palm. Palmar and plantar psoriasis are varieties of the squamous and circinate syphilide, as a rule, although they vary from a distinct squamous syphilide to a simple erythema, followed by some peeling or cracking of the skin and subsequent pigmentation. These lesions are uncommon manifestations of syphilis, but when they occur are very characteristic. *Vesicular and Pustular Syphilides.*—A true vesicular eruption in syphilis is very rare, although occasionally met with. Syphilitic eczema, if we may use the term, is of slow progress, characterised by the absence of itching and weeping, the presence of pigmentation of the skin, and the association with other syphilides of a different type. Diagnosis.—Practically, the only vesicular and pustular eruptions likely to be confounded with syphilis are varicella and variola. Varicella occurring in an adult may suggest syphilis, especially when the vesicles occur on the penis, and become irritated, thereby suggesting primary venereal sores. Mild variola, occurring in an adult who has been only vaccinated when a child, may be mistaken for syphilis ; but the absence of other signs, and the uniform nature of the eruption, should make diagnosis easy. The ecthymatous syphilide is a further development of the pustular, and usually occurs only in neglected and debilitated subjects. It is usually mixed with other syphilides, and is a stepping-stone to the next syphilide. *Rupia.*—It commences either as a pustular eruption, which rapidly becomes ecthymatous, or as a primary bullous eruption, soon becoming purulent. *Bullous or Pemphigoid Syphilides.*—Pure "syphilitic pemphigus" is almost unknown in adults. In infants it occurs as a manifestation of congenital syphilis, and usually affects the palms of the hands and soles of the feet. In adults, practically the only bullous syphilide is that preceding rupia. *Pigmentary Syphilide.*—There is apparently a true pigmentary syphilide apart from the stains left by previous eruptions. This consists of irregular pigmented spots, discrete or confluent, the skin between the spots appearing abnormally white. It occurs chiefly in women, and is usually situated on

the neck. *Tubercular Syphilide.*—This consists of convex projections, or tubercles, of the skin of a gummatous nature, occurring in late secondary or tertiary syphilis. They often ulcerate and coalesce, forming the so-called "syphilitic lupus." Diagnosis.—This has to be made from lupus, which is, however, of much slower growth, and is usually present in childhood or adolescence, and is characterised by the presence of the "apple-jelly" deposit of tubercle in the skin. Subcutaneous gummata are common in late secondary and early tertiary syphilis, especially on the front of the leg over the tibia. They have to be diagnosed from rheumatic nodules, which is usually not difficult, as they seldom occur without other signs of syphilis.—*Treatment, July* 28, 1898.

116.—VACCINATION RASHES.

By Robert J. Carter, M.D. Lond., Assistant Physician to the Western Skin Hospital.

[Much of Dr. Carter's paper has had to be omitted here.]

In my experience post-vaccinal rashes are uncommon—that is to say, such rashes as may occur within a period of time in which it may reasonably be supposed that the course of vaccinia has in some way or other been instrumental in causing their appearance. What this limit of time after vaccination may be at which eruptions of the skin may appear, due indirectly or directly to the operation, it is difficult to state precisely. Dr. Crocker states that in no case can an eczema be due to vaccination where the vaccine pustule has completely healed before the appearance of the eczema. Personally, I should hesitate to ascribe any rash as due to vaccination except vaccino-syphilis, when after examination the site of the vaccination is found soundly healed, which may roughly be taken as occurring from four to five weeks after the operation. For our purpose vaccinia may be practically classed amongst the other exanthemata, that it is a constitutional disease which more or less profoundly affects the whole of the tissues of the human organism in which it occurs. That some tissues in the same organism are affected more profoundly than others is a well-known clinical feature in every constitutional disease, and it would appear quite easy to conceive that in certain individuals vaccinia may produce a condition of cell change and tissue alteration in the skin causing the appearance of a rash, the type of such rash varying with the individual peculiarity of the skin—a peculiarity not of texture, complexion, &c., but physiological and vital. These remarks only refer to what are termed "pure vaccination rashes," that is, due to the inoculation of pure vaccine virus and

not to extraneously introduced germs. The connection between vaccination and the eruptions due to extraneously introduced germs is absolutely one of cause and effect, and requires here no further discussion. Owing to the enormous percentage of children vaccinated in the present day (practically in London over 90 per cent.) had vaccinia much influence as a causative agent in the production of skin affections, surely they would have increased *pari passu* with vaccination. This I venture to doubt, for a reference to writers of the pre-vaccination days certainly leaves one with the impression that such a disease as infantile eczema was as common then as now. As far as I have been able to ascertain there are no published figures as to the possible frequency with which post-vaccinal rashes may occur and, in fact, the whole literature of the subject is very meagre. As a possible result of the paucity of such literature and references in standard works many rashes are ascribed to vaccination, not only by the parents of children, but by medical practitioners, which have absolutely no connection with vaccination either near or remote. A case of generalised eczema wrongly ascribed by a medical practitioner to vaccination is a centre from which all kinds of anti-vaccinationist poison emanate. The possible dangers of vaccination are absolute and quite real enough without the invention of bogies to frighten weak-minded people about an operation which is probably the most important to the community at large of any we are ever called upon to perform. Vaccination rashes have been variously classified. Dr. Crocker's modification of the one by Mr. Malcolm Morris would appear to be the most complete, and, with an addition of my own, is the one I shall use as a basis for my remarks.

Classification of Vaccination Rashes:—Group I.—Eruptions resulting from pure vaccine inoculation. (*a*) Secondary local inoculation of vaccine. (*b*) Eruptions before the vesicles form, urticaria, erythema multiforme, vesicular and bullous eruptions. (*c*) Eruptions after formation of the vesicles due to the absorption of the virus; (1) morbilliform, scarlatiniform and diffuse erythema, erythema multiforme, vaccine lichen, purpura; and (2) generalised vaccinia. (*d*) Sequelæ of vaccination, eczema, psoriasis, pemphigus, urticaria, and congenital syphilitic rashes. Group II.—Eruptions due to the vaccine plus some other virus. (*a*) Introduced at the time of vaccination; (1) producing local disease, impetigo contagiosa, or other form of superficial inflammation; and (2) producing constitutional disease, syphilis, leprosy, and tuberculosis. (*b*) Introduced after development and rupture of the vesicles (about the eighth day), erysipelas, cellulitis, impetigo cantagiosa, furunculosis, gangrene local or isseminate, pyæmia.

[Of vaccine syphilis, Dr. Carter says the following :]

The occasional inoculation of syphilis with vaccinia cannot be denied, and is the great weapon in the hands of the anti-vaccinationists, but it has happened so rarely as practically to become a clinical curiosity, and with the introduction into general use of calf lymph will disappear altogether. When syphilis is inoculated simultaneously with vaccine virus, according to Fournier three alternatives present themselves :— (1) Syphilis is not transmitted but vaccinia is; (2) syphilis is transmitted and vaccinia fails ; and (3) both are transmitted, some points of inoculation giving rise to typical vaccine vesicles, whilst later a syphilitic chancre or chancres appear at a point of inoculation when vaccinia has failed. Hutchinson states that a syphilitic chancre may follow typical vaccine vesicles in the same site. Fournier gives an excellent table in his clinical lecture on the subject, as to the differential diagnosis of vaccino-syphilis which is too long to give here. Briefly, he points out that the syphilitic chancre is limited to one or two points of inoculation, inflammation is slight, loss of substance is superficial, and the parchment induration is typical, not inflammatory. The acquired syphilitic rash appears at the earliest from fifty to ninety days after vaccination, and requires in every case the existence of a specific sore at the site of the vaccination. In fact, vaccino-syphilis is in no way different from syphilis acquired in other ways, and follows precisely the same course.— *The Lancet, August* 20, 1898.

117.—THE SKIN AFFECTIONS OF TYPHOID FEVER.

The skin, from its very office of protector and from its exposed situation, is especially liable to disease, and the lowered vitality of the body in typhoid does not tend to diminish this danger ; the integrity of the appendages of the skin becomes still more jeopardised. To the student of typhoid the most important skin lesion, both on account of its frequency and its diagnostic value, is the eruption of the rose-coloured, lenticular spots ; papular elevations, usually situated upon the abdomen, though they may be found on any part of the trunk, and even on the face and extremities, occurring as a rule in suddenly appearing crops which, lasting a few days, gradually disappear, leaving brownish stains ; occasionally they become capped by a small vesicle, but even in the malignant cases rarely, if ever, become pustular ; indeed, in the malignant cases they are more likely to be the subjects of hemorrhage, forming the so-called petechiæ. They rarely exceed four millimeters in size, and

disappear readily on pressure, only quickly to reappear when the pressure is removed. In cases which perspire considerably, especially those cases in which the coal-tar antipyretics have been given, and even sometimes after the bath, miliary vesicles or sudamina are often present, particularly on the chest and abdomen. With the establishment of convalescence these disappear, and, where they have been abundant, a branny desquamation not unlike that of measles often follows. Anyone who has seen considerable of hospital practice has doubtless noted the frequency with which steel gray, or more often pale blue, spots are seen beneath the skin of the abdomen, chest, and particularly the thighs. These peliomata, as they are called, are not confined to typhoid, are usually somewhat irregular in outline, are larger than the rose spots, do not disappear on pressure, often cause the victim to irritate them by scratching, and are undoubtedly due to the presence of pediculi. During the early stages of the disease, and especially if any of the coal-tars or quinine have been administered, an erythematous rash may appear, first on the chest as a rule, usually extending from there all over the body with the exception of the hands and face. This rash occurs with considerable frequency, rather more so than either urticaria or herpes, neither of which are by any means uncommon. Gilman Thompson, in his report of "Unusual Complications of Enteric Fever" ("Medical and Surgical Report of the Presbyterian Hospital in the City of New York," 1898), speaks of two skin lesions, purpura hemorrhagica and papular eczema. He reports a case of the former at some length after giving a typic history of typhoid infection.

Of other lesions of the skin, not eruptive in character, one of the most common is œdema. This may result from a variety of causes, as thrombosis of a vein (especially the femoral), as a sequence of nephritis, but most commonly in the lower extremities, due to the cachexia and emaciation produced by the disease. In the latter instance the œdema is most apt to manifest itself when the patient begins to walk around, and indeed almost every case of severe typhoid is more or less subject during convalescence to this annoyance. Even the laity are familiar with the frequency with which alopecia occurs in this disease. Occasionally permanent baldness results, but the instances are very rare. Of the other appendages of the skin, the nails also suffer from lack of nutrition, and one can often make the diagnosis that a patient has been suffering from some prolonged illness, presumably typhoid, by transverse ridges appearing on the nails several weeks after convalescence has become established.—*From a leading article in the Journal of the American Medical Association, July* 9, 1898.

118.—DRUG ERUPTIONS.

By J. H. Stowers, M.D.

It must be remembered that the same drug is capable of producing at different stages of its influence very dissimilar appearances. Quinine is followed by erythema, vesicles and bullæ, eruptions of urticarial and purpuric kind, exfoliation, abscess, and even gangrene. I have seen in the person of a woman, who had large doses of quinine for a considerable period for the treatment of malarial cachexia, several sloughs on the trunk and limbs which might easily have been mistaken for syphilitic ulceration. The more sensitive surfaces, such as the face, flexures of joints, &c., are naturally more prone to the effects of local irritants than other parts, besides which, as has been pointed out, the eruption may occur quite distant from the seat of contact. The course of the eruption, which is generally variable, may cease to develop after a certain stage in spite of the persistent administration of the drug. This I have seen in several cases of bromism. Sometimes, however, the cutaneous manifestation continues for a considerable period after the ingestion of the drug has ceased. Occasionally a seeming predilection for cicatricial tissue has been noted in cases of eruption due to the bromides. The majority of drug eruptions on general, etiological, and other grounds, must be included in the list of toxic erythemata.

Formerly a limited number only of medicinal agents were recognised as causing cutaneous lesions (*e.g.*, roseola and urticaria after the ingestion of a few drugs, of which copaiba was probably the most common), but of late years the list of drugs capable of producing eruptions of the skin through the vaso-motor nerves has been largely added to—*e.g.*, particularly in those individuals prone to eczematous manifestations, whose cutaneous proclivities may be transmitted through successive generations, and in persons of so-called scrofulous habit and lymphatic temperament. That a textural predisposition often exists is undeniable. A clinical distinction, however, should be drawn even in eruptions from the external application of drugs, writes Morrow, "between those which are constant and regular, and those which are variable and irregular; the former depending mostly upon the drug itself, the latter upon the predisposition of the cutaneous tissues." The eruptions following the use of iodides may be mentioned as being strangely variable, sometimes acneiform only, sometimes bullous and pustular, sometimes tubercular, and followed by the formation of subcutaneous nodules. In a case cited by Dr. Sangster so unusual were the manifestations that it was impossible by appearance alone to

distinguish them from dermato-syphilis. However, with the discontinuance of the drug the lesions disappeared. In this relation I recall a case in my own practice.

[The case occurred in a man who was being treated for syphilis. An iodide rash was mistaken for smallpox, and he was admitted into a fever hospital.]

Besides the influence of "local idiosyncrasy" it has been contended that part of the disturbing action of certain agents expends itself upon the skin, and also that some eruptions result from irritation of certain structures, *e.g.*, the sebaceous glands through which a particular drug is eliminated in part, while others are due to changes in the blood, including disorganisation of blood-corpuscles. It is also well known that both functional and structural disorders of the kidneys predispose to the production of drug eruptions by means of defective elimination. E. Parkes, W. Roberts, L. Brunton, and others have published special observations in this direction. Numerous writers have been led to the conclusion that the sebaceous glands are the seat of primary structural change in eruptions due to bromism and iodism, but instances have been recorded showing that this is not constant. Dr. Thin described the sections he made of the skin of a patient who died during the time that an extensive eruption, due to iodide of potassium, was present, and he reported that "the sebaceous glands were unaffected, the main pathological condition being the blocking of the vessels at certain points, leading to rupture and the formation of varying degrees of the local lesions." Drs. S. Arloing and Alfred Salter have published some remarkable observations on the subject of bacterial toxin elimination by means of the sweat in health and disease, which are worthy of the careful study of dermatologists. Lastly, some drugs act in a specific manner upon the nervous system, and localised neuritis may even result from their toxic effects, arsenical herpes probably being the commonest example. Fagge, Hutchinson, and many others have written in detail upon this subject.

To recapitulate, the active principles of drugs exercise their effects in the production of cutaneous eruption, according to Fox—(1) Upon the vaso-motor or trophic nerves (central or peripheral). (2) Upon special tissues, as skin, nerve structure, &c. (3) Upon special glands or appendages irritated during the process of elimination. (4) Upon natural function by the production of excessive action. (5) Upon the blood-vessels or their contents. So numerous are the drugs to be included in this group (now approaching 100, I believe), that it is impossible here even to enumerate them ; suffice it to say that they include some of the most recent additions to the pharmacopœia.—*British Journal of Dermatology, August*, 1898.

Obstetrics and Gynæcology.

119.—FALSE LABOUR PAINS.

By T. Mitchell Burns, M.D., Professor of Obstetrics, Gross Medical College, Denver, Colo.

As I believe there are important points in the diagnosis and treatment of false labour pains which are not mentioned by the majority of obstetric text-books, I desire to present this minor subject and obtain your opinions. As we are called to our dispensary cases as soon as the pains occur every ten minutes, we have seen a proportionately large number of patients suffering from false labour pains. At times calls to such cases have been nearly as frequent as to real labour.

Definition.—False labour pains are pains which simulate true labour pains, but are not at the beginning the result of compression or tearing of the nerves of the birth canal.

Time.—Generally in the last weeks of pregnancy, but they may occur any time during pregnancy or even in the non-pregnant to a less extent. The pains frequently accompany sinking of the uterus or occur at the time for a menstrual period.

Synonyms and Diagnosis.—It is said that none of the premonitory symptoms of labour are present. Sinking of the uterus and other premonitory symptoms are often present. A great majority of writers state that in a case of false labour pains the pains are irregular, do not occur at the same time as the painful uterine contractions of pregnancy, that the pains are felt all over the abdomen, and do not progressively increase as do labour pains, and that they do not dilate the cervix. Now, this may true at the onset, but sooner or later the pains may be only in the back or groins, occur regularly, be as severe as labour pains, and often accompanied by painful uterine contractions which may cause from one to three fingers' dilation of the cervix. These uterine contractions are, however, generally only progressive for a time, and disappear when the cause is removed. It is sometimes impossible to differentiate them from true labour pains without waiting an hour or two to note the progress of the dilation of the cervix or the effects of the therapeutic test. To determine if the uterus contracts at the same time as a pain, the text-books say to place the hands very gently to the fundus,

but it may be necessary to feel the lower uterine segment per vagina to exclude the possible contraction of the abdominal muscles. The symptoms of threatening premature labour are identical with those of false pains when painful uterine contractions are present. A painless uterine contraction may occur at the same time as the colicky pain in the intestines. The irritation caused by the colic may bring on uterine contraction, at first painless, later painful. Effacement and one to two fingers' dilation of the cervix may occur in multiparæ, with lacerated cervices from relaxation, independent at least of painful uterine contractions.

Prognosis.—The pains generally disappear rapidly if the cause be removed. Rarely premature labour follows. Some cases of tedious labour supposed to be at term and lasting two or three days are probably due originally to the irritation of false labour pains which have produced enough irritation to excite a little prematurely true labour pains, and finally expulsion of the uterine contents. When the false pains have excited threatening premature labour pains and some dilation of the cervix, labour at term is frequently easier as a consequence.

Treatment.—As soon as false labour pains are suspected a four-quart enema should be given at once, and then a fourth of a grain of morphine hypodermically. The morphine may be repeated by the mouth in an hour or two if the pain lessens but does not disappear. Nothing stops the pain so rapidly as an enema. Do not think of cathartics. They take too much time, and may increase the irritation. In some cases it is impossible to stop the colic until after hot drinks, as ginger and peppermint, or inhalations of chloroform, and even hot fomentations and flaxseed meal poultices have been used.—*Journal of the American Medical Association, September* 17, 1898.

120.—VAGINAL EXAMINATIONS AND DOUCHES IN NORMAL LABOUR.

By Dr. George P. Shears, New York,
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[From Dr. Shears' paper :]

First, we note that in normal labour no douches of any kind are necessary. But what is normal labour? One thing is usually omitted in its definition, namely, that labour complicated by vaginal examinations and douches is not normal. In discussing the subject of douches, we are obliged to take up that of vaginal examinations as well, since in most cases the

latter furnish whatever of justification there is for former. A very large proportion of the cases seen by the general practitioner are cases of normal labour in multiparæ, and would get along perfectly well without any active interference whatever.

Vaginal examination in labour is not only often unnecessary, but is in itself a positive evil, and should be employed only to avoid a greater evil. Not uncommonly, by the pain and nervous shock which it occasions, it arrests, or unfavourably modifies, the course of labour, and it is the most common cause of sepsis. But it may be said that, with proper precautions, vaginal examination is harmless. This statement is to be regarded with judicious scepticism. The fact that surgeons of experience disagree as to the best method of hand disinfection confirms the conclusion of modern bacteriologists that no method is infallible. Again, it may be said that unless frequent vaginal examinations are made complications will be overlooked. When a delayed first stage threatens the life of mother or child, it is necessary to introduce the hand into the uterus for the purpose of making an exact diagnosis, if the diagnosis can be made in no other way. But who would advise this as a routine practice? In a large proportion of the cases in which external palpation fails to give satisfactory results, all necessary information can be obtained by rectal examination.

A common cause of unduly frequent vaginal examinations is the inexperience or indecision of the practitioner. We often find that those who criticise the use of the forceps and the performance of obstetric operations do not hesitate to incur the grave responsibility of making frequent examinations, both before and after delivery. The term meddlesome midwifery should not be applied to obstetric operations, which, when indicated, are really conservative measures, but rather to unwarranted interference with normal labour, and especially to examinations and douches that are not necessary. It is as futile to interfere with Nature's processes of repair in normal labour as to rely upon her unaided efforts in abnormal labour. While unnecessary examinations are objectionable before delivery, they are doubly so afterward, when a multitude of small lacerations and abrasions, which soon heal if left alone, offer as many avenues for the introduction of sepsis. Gynæcologists are fast reaching the conclusion that moderate cervical tears not causing hemorrhage are best left alone. Perineal lacerations which endanger the integrity of the pelvic floor of course require immediate repair, and the same statement applies to the larger superficial lacerations of the perineum. These, however, are not parts of normal labour, and should occur only in a limited proportion of cases. To distend the cervico-vaginal canal in search of small tears whose edges are in

opposition and have no tendency to separate, would be ludicrous if it were not so dangerous. It is true that an extensive laceration of the vagina, requiring immediate attention, may co-exist with an apparently normal condition of the external parts ; but it is the testimony of experienced obstetricians that a sufficient inspection of the vagina may be obtained by everting the posterior vaginal wall through the rectum.

The fear of post-partum hemorrhage and retained placenta, accidents which, under proper management, are of the rarest occurrence, leads to much intra-vaginal manipulation and consequent sepsis. The introduction of the hand into the uterus is sometimes rendered necessary by post-partum hemorrhage and other morbid conditions. Here it is, of course, warrantable to incur a lesser danger in order to avoid a greater one, but the occurrence of sepsis after the introduction of the hand into the uterus has been noticed by many careful observers, and this procedure should be avoided unless imperatively indicated. The practice of introducing the hand into the uterus to remove fragments of membrane which may have been torn off during the delivery of the placenta should be unhesitatingly condemned as far more dangerous than allowing them to remain. In aseptic cases they are usually passed without trouble in a few days. We must, however, admit that in general practice many cases require vaginal examination for one reason or another. The physician's time is limited, and he cannot watch his cases from beginning to end, as can the resident staff of a maternity hospital. Rectal examination, while it often answers the purpose admirably, makes a careful subsequent disinfection of the hands necessary, and perhaps requires the presence of an assistant who can make vaginal or uterine examinations, should they be required by the occurrence of hemorrhage, laceration, or other complications.

If, then, vaginal examination is to be allowed at all, to what extent should it be limited? Admitting that definite rules can hardly be laid down, there are yet certain general principles which may be of assistance. The importance of an examination at some time during the last few weeks of pregnancy cannot be over-estimated. Its prophylactic value is often far greater than that of examination during labour, and its general neglect is one of the most serious defects of modern obstetric practice. If pelvic deformity or other complication be suspected, careful vaginal examination will be necessary, but in the majority of cases an external examination will be sufficient. In addition to this, it will in most cases be advisable to make a careful vaginal examination in the early part of the first stage of labour. More solicitude is naturally felt in the case of a primipara than in that of a woman who has already borne a child at term and who

has no history of difficult labour. As the head advances the difficulty of examination becomes less, but in normal cases it can hardly be said that the necessity for examination becomes greater. There is, of course, no doubt that the ability to recognise promptly a delayed first stage and the cause of delay is of the highest importance, and in doubtful cases the accoucheur should not allow timidity or the fear of frequent examinations to prevent him from clearing up all doubt by thorough and careful investigation, under ether if necessary. On the other hand, however, he should perfect himself in every extra-vaginal method of diagnosis which may save his patients from examinations and manipulations that are not only unnecessary but at times dangerous.

It is undoubtedly true, as remarked by Lusk, quoting Ahlfeld, that under certain conditions face presentation is favoured by rapid escape of the amniotic fluid, and, as prolapse of the cord and other accidents occasionally occur at this time, there is perhaps some reason for making a vaginal examination immediately after rupture of the membranes. This will also determine the fact of their premature rupture, an accident which makes careful subsequent observation of the case imperative. It may not be out of place to recall here the well-known but too often forgotten fact that the danger of sepsis is distinctly increased when the finger is carried within the cavity of the cervix or into the lower uterine segment, where the acid vaginal mucus no longer aids in inhibiting bacterial development. The necessity for frequent examinations during the second stage is not apparent, especially if examination after rupture of the membranes shows that there is no prolapse of the cord, no extension of the head or other abnormality, and if the fœtal heart sounds are normal. In normal cases, if the head is advancing, it is pretty safe to say that dilatation is taking place, and it hardly seems necessary frequently to demonstrate this fact by measures which may endanger the welfare of the patient. Those who have become expert in external palpation regard it as a more valuable means of diagnosis than vaginal examination. No unusual skill is required, but simply ordinary intelligence and perseverance. It is, indeed, strange that so valuable a resource should be commonly neglected, while vaginal examination is constantly practised at times when it is not only unnecessary but distinctly dangerous. The post-partum douche, then, is not a necessity *per se*, but is given because most labours are not, properly speaking, normal. The fact that in most cases repeated examinations have been made, and too often without proper precautions, is its principal justification. The vagina is irrigated because of the possibility that sepsis has been introduced from without.

To sum up, the common custom of making frequent vaginal examinations during the whole course of labour is unscientific and unsafe, and it should be the aim of the conscientious obstetrician so to familiarise himself with all extra-vaginal methods of diagnosis as to reduce the necessity for vaginal examinations to a minimum. All intra-vaginal manipulations are especially objectionable after delivery. When the vaginal secretions are normal, ante-partum douches are unnecessary and harmful. In normal cases the single post-partum douche is unnecessary and therefore objectionable, but in many cases circumstances render it advisable as a precautionary measure. The routine use of douches during the normal puerperium is contra-indicated. It is, of course, to be understood that these conclusions apply only to normal cases, and in no way forbid the most searching examination or thorough disinfection when indicated.—*Medical Record, September* 17, 1898.

121.—THE USE OF THE FORCEPS.

By R. Milne Murray, M.A., M.B., F.R.C.P.Ed., Assistant Physician, Royal Maternity Hospital, Edinburgh.

(1) *The guiding principle in applying the blades.*—When the head is at the outlet and fully rotated, the application can only be faulty from gross carelessness; but when the head is in the cavity and still in the oblique diameter, a very faulty application is often made. It is still largely the teaching and the practice of the British schools to apply the forceps as far as possible in relation to the pelvic transverse without reference to the position of the head. Now when the head is high in the cavity, or even low in the cavity and not rotated, I am convinced that this is wrong. The result of this practice is that we obtain a more or less oblique grasp of the head, and it follows that, since the blades tend to rest on somewhat sharply curved portions of the head, one or other inclines to slip off during application, and the difficulty of locking is notorious. Equally notorious is it that the vicious practice of trying to rectify this by twisting the blades into position is a source of danger to mother and child. But apart from this, after locking is effected and traction begun, one of two things follows :—(*a*) The head as it descends rotates, and in doing so throws the forceps into the opposite oblique. This usually happens with axis-traction forceps when rotation is favoured. If delivery is effected without removing and readjusting the forceps, extensive damage to the outlet will follow. (*b*) The head descends without rotating, and engages the outlet in the oblique. This often happens with the older forceps, and

is even more disastrous than the former. I venture to think that the practice of the French school is much sounder. The forceps should be applied to the biparietal diameter of the child's head wherever situated, and then, as the head descends, rotation will bring the blades into the transverse diameter just as the head enters the antero-posterior, and the head, forceps, and pelvis will present proper relations at the outlet. I feel sure that extensive damage to the lower part of the vaginal canal—especially internal laceration of the perineum—is often caused by oblique position of the head or of the forceps at the outlet. The application of the forceps to the side of the head may require more care than the other methods, but we are there to take what care is necessary for the benefit of the patient. I need not dwell on the objectional results of jerky irregular traction. A uterine pain begins almost imperceptibly and increases in intensity by fine gradations. So should an effort of traction. Only by this can we bring the head and canal into proper relation, and only by this can we develop rotation and minimise the danger of pressure.

(2) *The mode of traction.*—Every year I become more and more convinced of the advantages the axis-traction forceps give us in protecting the perineum from injury caused by undue delay, or laceration caused by faulty mechanism. The procedure I adopt is as follows. As soon as the vault touches the floor the forceps are held between the finger and thumb of the right hand, while the left is placed over the fundus. I may say at once that I never in any circumstances "support the perineum." The left hand enables me to control the retraction, to detect the beginning of a pain, and often to aid the action of the forceps by efficient pressure. I press the chloroform as far as will keep the patient quite still. Extraction is effected by gentle pressure on the traction bar, the rods and shanks being kept just touching. With certain exceptions I act as far as possible only with a pain, taking care always that traction is effected in such a way as to maintain the advance of the suboccipito-bregmatic diameter. In this lies the secret of success, for by means of these forceps we can restore or maintain the relation of this diameter to the outlet—a relation which is often disturbed by peculiarities of the pelvis, and more often by alteration in the shape of the head, caused by moulding or swelling of the scalp, associated with long and difficult labour. There is one group of cases, however, which form a marked exception to the rule of extracting with a pain. Not infrequently we find in elderly primiparæ that every uterine pain, when the head is low, is accompanied by a spasmodic action of the muscles of the floor, which for the time narrows the vulvar orifice and throws the perineum into a state of tense rigidity. It is in cases of this type that we find

instances of perineal laceration. In such a case I deepen the anæsthesia and carefully avoid traction, save in the intervals of pains. Delivery is simple and easy thus, for the orifice is often wide enough when not spasmodically contracted. This is another instance of inco-ordination, and must be treated in this special way. Without forceps such cases will continue in labour for hours, and as the spasm only passes off when the pains are checked by chloroform, this alone is not enough. (From Dr. Murray's paper read at the British Medical Association meeting, 1898.)—*British Medical Journal*, *August* 20, 1898.

122.—NOTE ON SOME DIFFICULT CASES OF FRONTO-ANTERIOR POSITIONS OF THE FŒTAL HEAD.

By George Roper, M.D.,
Consulting Physician to the Royal Maternity Charity.

After an extensive experience in difficult labours, I never felt satisfied with the knowledge I had of the nature and correct treatment of the difficulties connected with the fronto-anterior positions of the fœtal head in labour. Given a child of ordinary size and a fairly formed pelvis, most of these cases will end naturally. But with a child beyond average size, or with a small or slightly mis-shapen pelvis, considerable difficulties occur. It was not till reading Dr. Herman's remarks in his book on "Difficult Labour" that the problem was solved to me. Dr. Herman particularly calls attention to the position of the fœtal trunk, abdomino-anterior, and gives directions for its diagnosis by abdominal palpation when conditions are favourable for such an examination, as the absence of a thick layer of abdominal fat. But diagnosis by this method is not necessary, for if we can feel the fœtal head in a fronto-anterior position, this is a certain index that the trunk is in a position abdomino-anterior. Dr. Herman's directions as to rotating the trunk into an abdomino-posterior position are of first importance, and if possible rotation should be effected. For its successful performance we require—(1) An abdomen not thickly covered by fat. (2) Unruptured or but recently ruptured membranes. (3) A non-contracted state of the uterus. If the trunk can be rotated, rotation of the head will follow. If there is failure in rotating the trunk, the head must be dealt with. Dr. Herman sums up the treatment:—(*a*) To pull; (*b*) to flex; (*c*) to rotate.

In many of these difficulties delivery is not effected by any of these proceedings. Long-continued and forcible traction with forceps will fail. The instrument cannot be easily fitted to the

head in the fronto-anterior position. There is difficulty in locking the blades without injurious pressure on the fœtal head. The instrument will often slip (unless each blade is pushed up beyond the occipital pole, and then the head is grasped in its widest diameter—bi-parietal), and hence hurtful pressure on the cranium may result. It is evident that the position of the head is dependent on that of the trunk. I hope to demonstrate by reports of two cases that the greater difficulty in delivery is due to the dorso-posterior position of the trunk, and that the position of the head is a minor factor of the difficulty. The dorsal surface of the fœtus is composed of parts which are firm and incompressible. They are the upper part of the dorsal spine, the scapulæ, the backs of the ribs, and the backs of the shoulder-joints. These parts pressed on the lower lumbar vertebræ throw the trunk into a state of extension; the shoulders are thrown back or squared, the distance from point to point of them being increased; the fœtus cannot be folded into a compact ovoid form as in the abdomino-posterior position. So far as I know none of the text-books refer to these conditions as constituting the difficulty.

Case 1.—Mr. Perry, surgeon, of Reepham, Norfolk, asked me to assist him in a case of difficult labour. The patient was a young woman in labour with her second child. Her first child was born alive after a very hard labour. The abdomen was loaded with fat, the liquor amnii had been long discharged, so there was no hope of rotating the trunk. The head was fronto-anterior, and the scalp much swollen. Long-continued and forcible efforts had been unsuccessfully made with forceps. The patient was much exhausted. Perforation was decided on. The head was reduced to the smallest dimensions by the cephalotribe. Traction with this instrument firmly secured on the remains of the head failed to bring the shoulder through the pelvic brim. The craniotomy forceps and crochet were used without success. Podalic version was attempted, and with some little difficulty a foot was secured and brought down as far as the brim. A loop of cord was passed round the ankle, and by traction on this and pushing the head upwards version was completed.

Case 2.—This same patient in her third labour again had a fronto-anterior presentation. This time she was attended by Dr. Bansall, of Aylsham, Norfolk. The conditions in this labour were much the same as in the former one. Forceps had been used to the utmost extent as regards both duration and force. Dr. Bansall asked me to see her, and I decided to deliver by podalic version. The hand was passed up one of the sacro-iliac angles, and a foot brought down to the pelvic brim and snared as in the former case. The child lived, and the mother made a good recovery.

I have recorded the first case to demonstrate that, as the crushed head could not have been the obstacle to delivery, this obstacle must have been the shoulders at the brim, the trunk being dorso-posterior. So far as I know, no text-book refers to this position as the cause of the difficult delivery, except what is given in Dr. Herman's work. But in treatment he says nothing about podalic version. In performing this operation,

if, in gently bringing down a foot, the toes are directed towards the mother's back the abdomen will readily turn in the same direction. It is important that the trunk should be rotated into an abdomino-posterior position. The cases I have recorded are only two, and it may be remarked that they are not sufficient for a correct conclusion to be drawn from them ; but I could give many others which occurred to me during my term of office in the Royal Maternity Charity. I believe that in such cases, after a moderate trial with forceps, podalic version is the correct mode of delivery in the interest of both mother and child. In future I should prefer to call these cases abdomino-anterior rather than fronto-anterior, to emphasise the importance of the position of the trunk in making labour difficult.—*Transactions of the Obstetrical Society, vol.* 40, 1898.

123.—PREGNANCY AND FIBROID TUMOURS.

By H. C. Coe, M.D., of New York.

[From Dr. Coe's paper :]

As regards diagnosis the history may be entirely misleading, especially where the patient is unmarried or the periods are irregular. Rapid enlargement of the tumour in a woman who has previously been under observation, in the absence of evidences of degenerative changes, would cause suspicion. This sign alone led to the diagnosis of pregnancy in two cases in which I performed hysterectomy for large multiple fibroids. Both patients were unmarried, one being a young girl, the other a negress so advanced in years that she was thought to have passed the menopause. With a retro-uterine or intraligamentous growth the diagnosis would be comparatively easy because the softer body of the uterus could be isolated from the tumour. Asymmetry of the uterus is not an infallible sign, by the way, as it has been noted in normal pregnancy. Dermoids and solid tumours of the ovary, when impacted in the cul-de-sac, and adherent to the uterus, are so often mistaken for fibroids that the error should never be a subject for criticism. If there is any doubt as to the true condition, examination under anæsthesia is not only advisable, but obligatory. It is so important to determine, not only the fact of pregnancy, but the precise character, relation, and range of mobility of the tumour, that one cannot afford to neglect any means of arriving at an exact diagnosis. This is especially true if the question of the performance of a radical operation is under consideration. Any one can recognise a good-sized fibroid ; this is an elementary point. There are many other things to be taken into consideration.

The prompt recognition and proper appreciation of the complication which is under discussion calls for no small amount of diagnostic acumen. Certainly in the decision as to the best course of treatment to pursue there is opportunity for the display of the ripest judgment. As was stated at the outset, no fixed rules can be applied. Each case must be decided by itself, since no two are exactly alike. While the physician will naturally be somewhat influenced by the wishes of a patient who earnestly desires off-spring, he cannot allow this factor to have much weight when it is evident that it is impossible for pregnancy to continue to the full term without eminent risk to the patient. When the tumour, or tumours, is subserous and the uterus enlarges symmetrically, there will, of course, be no occasion for solicitude. A pedunculated, movable growth will bear watching, since symptoms of torsion may require a prompt resort to celiotomy ; or, it may slip down into the pelvis, so that it will be necessary to push it above the brim. A fibroid of considerable size, situated in the anterior or posterior uterine wall, may also take care of itself and cause no solicitude even during labour. It is hardly necessary to say that a woman with a large interstitial fibroid who becomes pregnant should be kept under careful observation. Doubtless such patients may go on to full term, though rarely. Few of us would care to have any member of our family take such a risk, but would prefer to terminate the pregnancy at an early stage, or to at once perform hysterectomy.

In the case of tumours springing from the lower uterine segment, it will be inferred pregnancy is a serious complication. The dystocia which is present during labour is a familiar theme in all text-books on obstetrics. From a gynæcologic standpoint they are equally important. While it is granted that pregnancy may often continue to full term with impacted pelvic tumours, it is certain that the patient will suffer from various disturbances, and has the almost certain prospect of a difficult labour, usually with a dead child, unless an abdominal operation is performed. There can be little question that if an intelligent effort to dislodge the tumour from the pelvis under anæsthesia is unsuccessful, the uterus should be emptied, provided that the cervical canal is not so contracted that it is impossible for the fœtus to pass. It will be a question in most cases in which the patient is not seen until the fifth or sixth month (or even the fourth), whether it would not be better to allow the pregnancy to advance to term, and then to perform an elective Porro-Cæsarean operation. The possibility of enucleating *per vaginam* an extraperitoneal (or even an intraperitoneal) fibromyoma of the lower segment will naturally suggest itself to one who is familiar with such work, and this procedure if practicable

would seem to be preferable to sacrificing the entire uterus. It should be borne in mind, however, that the increased vascularity of these growths during pregnancy entails some risk of hemorrhage, so that the surgeon may be obliged to ligate the uterine arteries in order to control bleeding, or perhaps to extirpate the uterus. Pregnancy is not necessarily interrupted, and if it is, abortion does not imply an untoward result for the operation, since the obstruction to the escape of the product of conception has been removed. The persistence of pregnancy after accidental injury of the gravid organ during the course of abdominal operations shows that myomectomy by the upper route may be attempted with good prospect of success under favourable conditions. Certainly an explorative celiotomy does no harm, and may enable the surgeon to free an impacted or adherent tumour from the pelvis, so that the patient may go on to term—a far more rational procedure than to attempt enucleation of the growth per vaginam, with the finger, unaided by the eye. In fact, it may be better in a doubtful case to at once perform celiotomy in order to determine the exact nature and relations of the tumour. The incision may then be closed, and the growth attacked per vaginam, especially if pus be present, as in a successful case reported by the writer. The indications for supravaginal amputation or total extirpation do not differ essentially from those in the case of the non-pregnant fibroid uterus. Rapid enlargement, marked pressure-symptoms, serious impairment of the general health, may lead the surgeon to adopt radical measures at the outset. He will be influenced in this decision by the fact that under these conditions pregnancy can not, and should not, continue, and the inevitable abortion will diminish the chances of recovery from a subsequent operation. The operation itself is no more difficult than under ordinary circumstances, and the prognosis is equally good. The abdominal is certainly preferable to the pelvic route, in view of the more perfect control of bleeding and the diminished risk of injuring adjacent structures, especially the displaced bladder or ureter.—*Medical News, June* 4, 1898.

124.—CÆSAREAN SECTION.

By James Braithwaite, M.D., Obstetric Physician and Surgeon to the Leeds General Infirmary.

[The following is an abstract of a paper read by Dr. Braithwaite before the Leeds and West Riding Medico-Chirurgical Society :]

In both cases reported here Cæsarean section was performed at or about full term of pregnancy in consequence of the pelvis being blocked by ovarian tumours. In neither case could the

tumour be got at for removal when the abdomen was opened. *Case 1.*—The uterus, on exposure, was seen to be of an unusual dark blue colour in consequence of the placenta being attached to its anterior wall. The placenta was divided at the same time as the incision was made through the anterior wall of the uterus. The child was rapidly removed, and the uterus was wrapped up in a large hot sponge, which was pressed firmly upon it, and at the same time it was lifted out through the abdominal wound. The placenta and membranes were removed immediately after the child. The mother did well, and the child is still living and is now over a year old. *Case 2.*—This was almost precisely similar to Case 1. The mother did well, but the child unfortunately died within twenty-four hours. The following amongst other points were noteworthy in these cases. First, in opening the uterus, especially if the placenta was attached anteriorly, rapidity was of vital importance. The incision should be begun by a scalpel, but was better finished by very strong sharp scissors. Secondly, the edges of the incision must be seized and everted and compressed where necessary by a second assistant, not by the one standing opposite to the operator. The hemorrhage from the divided uterine wall was very easily arrested in this way, as it was entirely venous and at very low pressure. It, moreover, did not come from the whole surface of the wound, but only from two or three points. Thirdly, after the uterus had been emptied of the child, placenta, and membrane, and brought out of the abdominal wound, and wrapped in and pressed by a large, flat, hot sponge, the first stitch should, as recommended by Dr. Murdoch Cameron, be put in the middle so as to produce accurate adaptation. Before the wound was finally closed by the last two stitches, which should be at the upper end of the wound, the nozzle of a syringe should be inserted into the uterus and its cavity washed out by hot boric lotion in order to ensure the absence of clot. Fourthly, as it was ultimately absorbed, the best material for the sutures in the uterine wall was green chromic catgut soaked for half an hour in perchloride solution, 1 in 1,000. In making the first half of each knot the end should be put through the loop twice instead of once. A knot so made in catgut would hold, otherwise it was not safe if any strain was put upon it, as by vomiting. The sutures should be put in two to the inch, and so deep as just to miss the inner surface of the uterus. If placed at longer intervals, as recommended by Saenger, the wound was not quite safely closed.

In the discussion, Dr. Bell, in an experience of 8,000 midwifery cases, had only met with one case requiring Cæsarean section, and this occurred lately in a dwarf 3 ft. 5 in. high, whose pelvic

antero-posterior diameter was only 1½ in. The case occurred in a poor house, and a hurried operation was necessary without recourse to any thorough aseptic arrangements; nevertheless, complete recovery took place both of the mother and child.

Dr. Hellier deplored the frequency with which children were born with splastic paraplegia occurring immediately afterwards, and attributed this to the children being dragged through the contracted pelvis by means of forceps. He advocated in these cases a more frequent adoption of symphysiotomy, which experience had shown was a very safe operation.

Mr. C. J. Wright referred to three cases of Cæsarean section at which he had assisted for deformed pelvis some years ago, and contrasted the past with the present successful mode of operating. The respective merits of Porro's operation and Cæsarean section were also mentioned. The existence of ovarian growths in both of Dr. Braithwaite's cases emphasised the necessity for early removal when these were detected in all cases of pregnancy.—*The Lancet, November* 5, 1898.

125.—TUBAL GESTATION IN THE EARLY MONTHS.

By Walter W. H. Tate, M.D. Lond., M.R.C.P.,
Assistant Obstetric Physician to St. Thomas's Hospital, &c.

[From Dr. Tate's paper:]

In 17 of the 26 cases which serve to illustrate this paper the diagnosis was confirmed by abdominal section; in the remaining nine cases, although no operation was found necessary, the symptoms and physical signs were so definite as to leave little doubt as to the nature of the case. Cases of tubal gestation are occasionally seen before rupture, or before any hemorrhage has taken place around the ovum. Unfortunately symptoms at this period of the gestation are, as a rule, either absent, or not of sufficient gravity to suggest to the patient the necessity for medical advice. In a few cases (two out of the 26 cases in the present series) the subject of tubal gestation may first be seen at the time of rupture, or within twenty-four hours or so afterwards. In far the larger proportion of cases rupture does not occur at all, but hemorrhage takes place between the ovum and the tube wall, accompanied also by escape of the blood through the patent fimbriated end of the tube. Where the ovum is discharged from the tube with the blood the condition is spoken of as a complete tubal abortion. In these complete cases, although the symptoms at the time of the hemorrhage may be very grave, the patients very often recover without

any operative interference, and are not liable to recurrent hemorrhages. In other cases the hemorrhage occurs as before through the patent fimbriated end of the Fallopian tube, but the ovum remains within the tube. The retention of the ovum within the tube is a source of danger to the patient, as these are the cases in which further attacks of hemorrhage may occur, causing more or less serious symptoms and a continuance of pain. The knowledge gained from surgical interference in cases of pelvic hæmatocele has shown that the one important condition which leads to the formation of intra-peritoneal hæmatocele is gestation in the Fallopian tube. Other causes, such as rupture of varicose veins in the broad ligament, or regurgitation of blood from the uterus, though they may have some theoretical value, have not been demonstrated by any facts which will bear criticism. So far as regurgitation of menstrual blood is concerned, anyone who has endeavoured to squeeze the contents of a Fallopian tube distended with blood or serum through the cut uterine end after its removal would be convinced that the pressure within the uterus is quite insufficient to force blood from the uterine cavity along the Fallopian tube where the cervical canal is patent. The cervical canal in these cases is always the path of least resistance.

One of the first questions that should be put to a patient who is suddenly seized with acute pain in the lower part of the abdomen, apparently of pelvic origin, is the date of the last menstrual period. This, as a rule, is a most important aid to a correct diagnosis, and should never be omitted. It is not, however, an invariable rule to find a period of amenorrhœa or delayed menstruation. One has to remember the possibility of cases of tubal gestation terminating sometimes in the early weeks owing to hemorrhage occurring around the ovum, and in such cases there may be complete absence of any period of amenorrhœa. In the series of cases which form the basis of this paper, a period of amenorrhœa was present in such a large proportion that it is evident that this is a symptom of very great value. It is necessary to add, however, that the value of amenorrhœa entirely depends upon whether the patient is as a rule regular. When the patient is able to time the commencement of her period to the day, a delay of a few days or a week is sufficient ground for a suspicion of pregnancy. The first onset of symptoms occurred—In 1 case three days after a period was expected ; in 3 cases one week after ; in 5 cases two weeks after ; in 3 cases three weeks after ; in 2 cases four weeks after. In 14 cases, therefore, out of the 26 there was a definite period of amenorrhœa. In 6 out of the remaining 12 the symptoms commenced at or dated from a period ; in one case (where the patient had advanced to the third month of gestation)

the patient had had a regular period one month before her admission, and the first symptom began a week later; in another case the patient had not menstruated since the birth of her last child, fifteen months before; and in the remaining 4 cases the date of the last menstruation is not recorded. The actual proportion of cases in which a period of amenorrhœa was present amongst those in which the fact was recorded is 14 out of 21, or two-thirds of the cases. So far as the signs in the breasts are concerned, in only two cases out of the series were there any changes sufficiently marked to be of any practical value. The first symptom which usually arouses the patient's attention is the sudden onset of severe pain, often agonising. This pain is usually followed after a short interval by a blood-stained discharge from the uterus, which is very characteristic, and persists for an indefinite time. Vomiting is not usually severe, and not by any means a constant symptom. It was present in only seven of the cases, and in only one was it so violent and persistent as to make one suspect the presence of some ulceration of the stomach. It is only rarely that one has the opportunity of confirming the diagnosis of tubal gestation by evidence of the discharge of a decidual cast of the uterus. One has to be careful in inquiring about attacks of faintness, or sensations of a similar kind, to get definite information whether the patient merely felt faint owing to the severity of the attacks of pain, or whether she was actually faint, and the pallor was noticed by her friends. Faintness does not by any means always occur at the commencement of the pain. In those grave cases where sudden rupture of the tube takes place, or where an excessive quantity of blood is poured out into the pelvis, the patient becomes absolutely blanched, and unconsciousness quickly supervenes. All cases of tubal gestation do not, fortunately, present these alarming symptoms. When describing the usual mode of onset of symptoms, it was stated that in eighteen out of the twenty-six cases the first serious symptom was pain. In the remaining eight cases hemorrhage was the earliest sign that suggested to the patient that there was something amiss.

To sum up the important symptoms, we find first of all a history of missed menstruation in 66 per cent. of the cases. Next there is a sudden attack of severe pain, followed by more or less intermittent pain, increasing in severity from time to time. Thirdly, it usually happens that the attack of pain is followed in a short time by a discharge of dark-coloured blood per vaginam. These are the three most important and most constant symptoms, and where they are all present the diagnosis can usually be arrived at without any great difficulty. Sometimes, however, the symptoms may be more obscure, and it is

important in these cases to pay careful attention to the points mentioned above, and to see whether the results of the bimanual examination confirm the conclusion arrived at by the careful consideration of the history of the case.—*St. Thomas's Hospital Reports, New Series, vol.* 25.

126.—A CLINICAL LECTURE ON AMENORRHŒA.

By Alexander Russell Simpson, M.D. Edin.,
Professor of Midwifery and Diseases of Women and Children at the University, Edinburgh.

[From Professor Simpson's paper :]

When we come to look at our cases of amenorrhœa we have, first of all, to recognise that some of the cases that come to us are simply instances of retardation. Likewise, some women have a tendency to a premature menopause, that is to say, instead of going on menstruating until they are 45 to 50 years of age, the function may cease between 40 and 45 years of age. This occurs in about a quarter of the cases; in one-eighth of the cases the menstruation ceases between 35 and 40. Very few cease to menstruate before that age. But we have to remember this fact when we are consulted for amenorrhœa, and when, therefore, we have to decide upon what kind of treatment to follow or whether any is necessary. But when we have eliminated these cases and also kept in view the fact that an interruption to the continuance of menstruation is the normal consequence of conception and, after gestation, of lactation and the nourishment of the new-born child—apart from these physiological cases of amenorrhœa—we have a large group of pathological subjects, and we know that in a great many of these latter we have to do with some constitutional condition. You will readily understand from what I have said that a healthy nervous system, for example, is necessary and important for the due recurrence of the menstrual flow. Further, we recognise that for the healthy performance of menstruation it is absolutely necessary that there should be a healthy circulatory apparatus and a healthy circulating fluid. Here, again, we find that in many of the cases of amenorrhœa there are defects in the circulatory apparatus, such as heart disease, or there is imperfect development of the blood-vessels. Chlorosis, using the term in its wide sense to include anæmia in its various forms, is associated with amenorrhœa in very many cases—sometimes, it is thought by gynæcologists, as a result, sometimes as a cause. Certainly we find in many cases that the arrest of the menstruation in patients who are bloodless or have had an excessive loss

of blood, is a conservative phenomenon on the part of the system. Tuberculous patients are very likely to be amenorrhœic in the course of their history ; and as a result of various forms of phthisis we very often see that for weeks and sometimes months, before the fatal termination the patient has become the subject of amenorrhœa. In myxœdema, again, and in some cases of obesity, and notably in alcoholism, you will find the same thing, and in opium-eating and any form of morphinism ; alcoholism and morphinism lead quite distinctly to amenorrhœa. Further, all the conditions which deteriorate the general health, such as unhygienic surroundings and employments, and overwork of various kinds.

But besides looking to these necessities for menstruation—a healthy nervous system, good blood, and a good circulatory apparatus—we have also to look to the seat of the menstrual flow and the associated organs, because we have to recognise that the menstrual function is dependent not only on the condition of the uterus, but also on the condition of the associated organs. There are morbid conditions of the ovaries which lessen the menstrual flow. Where there is cystic degeneration of the ovaries, for instance, in many of the women menstruation goes on ; but in a considerable proportion of them it is lessened, while in some it disappears, more particularly if both ovaries are affected. Again, there are cases where the ovaries have become atrophied as the result of inflammatory processes. I might have noted among the general conditions which give rise to amenorrhœa the weakness that follows some of the febrile affections, such as typhoid fever or scarlet fever. You will sometimes find that several months after a protracted convalescence in this way that the menstruation will not come on for some time. That may be the result simply of general depression of the system, consequent on the fever having wasted the tissues generally. We have to remember that in some of them—notably, in scarlet fever—there may be ovaritis taking place, which leads to destruction of a great many of the follicles, so that the functional value of the ovaries in these patients may be greatly depreciated. In those cases where the follicular stroma of the ovary has been the seat of an inflammatory process during these fevers, the patient may have an amenorrhœa which may remain and become permanent. Therefore, I repeat, we have to keep in mind not only the general condition but the local results. Then there are supposed to be cases where the Fallopian tubes are at fault. In a good many cases the tubes are the seat of inflammatory changes at the same time as the ovaries are, and some gynæcologists are disposed to attribute a high importance to the activity of the tubes as a factor in regulating the menstruation. But amenorrhœa does not,

I believe, spring from disease of the tubes as a primary condition; far more frequently the cause of amenorrhœa is in the uterus itself, because the uterus is central as regards its function. There may be many of the cases that are congenital.

Besides malformations, we have cases where the uterus is the seat of some morbid change. For instance, there are the various neoplasms of the uterus, which are associated with amenorrhœa. There may be fibroid tumours which grow towards the cavity of the uterus, or where they grow in the wall, producing expansion and giving rise to menorrhagia; but where they grow sub-peritoneally we find they may be the cause of amenorrhœa. So also in some cases of cancer the patient may have an irregular loss of fluid, or may even cease to menstruate, the system getting worn down. Or she may be passing only blood, which is supposed by herself and by her friends to be the usual menstrual flow. Again, the uterus may be the subject of atrophy in a patient who already has had a fully developed uterus, and has had the menstrual function in full swing.—*The Practitioner, July*, 1898.

127.—PROPHYLAXIS OF DISEASES OF WOMEN.

By David W. Basham, M.D., Neal, Kansas.

[From Dr. Basham's paper.]

The question of prophylaxis of diseases of the female pelvic organs resolves itself into two principal propositions, the first of which consists in the minimising of traumatism to the genital mucosæ, and the second is the preclusion of the introduction of disease micro-organisms from the extraneous world into the hollow organs constituting the genital system. It will be seen then that the major part of gynæcologic prophylaxis rests in the degree of perfection with which the art of obstetrics is carried into practice. It is a fact beyond refutation than an enormous proportion of all gynæcologic affections have their origin in the parturient act, and the week in bed that follows. Endometritis, salpingitis, ovaritis, cystitis, and nephroptosis, are some of the conditions which are often simply sequelæ to the act of parturition and the puerperal month. So much depends upon the work of him who essays to minister to the needs of woman in the hour of travail, that it is not easy to over-estimate the importance of the offices of the accoucheur in the matter of diminishing the frequency of pelvic diseases in the female. The scientific obstetrician has well accomplished his duties, so that it is no longer a question of profound knowledge, but simply a matter of the better application of the principles

already well known to the profession. Of all the members of the medical fraternity who should act with an eye to the future condition of his client, there are none upon whom this obligation should rest with greater weight than the obstetrician. The prompt application of surgical principles to the treatment of traumæ received during childbirth may avert many of the troublesome sequelæ to that act which often terminates in serious pathologic changes, and often demand radical measures for relief. It is not at all improbable that uterine cancer is frequently the result of a neglected cervical laceration. The immediate restitution of a lacerated perineum may avert the occurrence of a case of prolapsus which would require hysteropexy, or even a case of procidentia uteri with chronic endometritis and hypertrophy of the organ, which might demand hysterectomy to effect a cure. Thus it is throughout the entire catalogue of minor accidents and the corresponding surgical procedures for their relief. There are some grave conditions which owe their inception to accidents occurring during the age of pubescence, or during the first years of menstrual life. It is here that the general practitioner might find an opportunity to enhance his usefulness at the expense of the neurologist. It is reasonable to believe that many cases of aberration of nerve function might be prevented by well-directed medical attention during the early years of menstrual life.

In sum: the prophylaxis of the diseases peculiar to woman may be embodied in a more perfect application of the principles of obstetrics in actual practice; a profounder understanding of the accidents occurring so frequently at the age of pubescence, and finally greater attention to the hygienic regulations which should govern daily life.—*Journal of the American Medical Association, September* 3, 1898.

128.—THE TREATMENT OF ACUTE PYOSALPINX BY INCISION AND DRAINAGE.

By Arnold W. W. Lea, M.D., B.S. Lond., F.R.C.S. Eng., Assistant Physician to the Clinical Hospital for Women and Children, Manchester.

[The details of the cases and some other parts of the paper have been omitted here.]

The management of acute pelvic inflammation is a subject of extreme importance, and the cases, as met with in practice, often present great difficulty. It is now well known that the large majority of purulent collections in the pelvis have their

origin in the Fallopian tubes, commencing as a purulent salpingitis, which may lead to an intra-peritoneal collection of serum or pus, or may form a pyosalpinx. It is, however, by no means easy in many instances to diagnose with certainty the presence of pus during the course of an acute attack. Many cases with severe symptoms recover entirely, or become chronic, resulting in the formation of inflammatory swellings at the sides of the uterus. On the other hand, we meet with cases in which, associated with pyrexia and the general signs of infection, a well-defined mass is discoverable in the region of the Fallopian tubes, on one or other sides of the pelvis, and in these cases the presence of pus may be diagnosed with a considerable degree of certainty. If the patient's life does not appear to be threatened by the continuance of the inflammation it is generally agreed that operation should be postponed until the acute attack has subsided. Sometimes, however, the symptoms, often coming on acutely, are so grave that if no interference is decided upon a fatal termination will ensue either from general peritonitis or septic poisoning. In these cases the best treatment to pursue becomes a matter of anxious consideration. Abdominal section for the removal of inflamed or suppurating appendages during an acute attack is attended by a very high mortality. There are several reasons for this. In the first place the general condition of the patient is usually not such as to withstand a prolonged and difficult operation, and secondly, in removing the pus sacs and separating the adhesions an escape of pus into the peritoneal cavity is very liable to occur, and as this pus generally contains virulent organisms, fatal peritonitis may ensue. The removal of a pyosalpinx and suppurating ovary through the vagina has been performed many times with great success, but in acute cases a radical operation of this nature cannot be undertaken with any degree of safety. These cases may, however, be cured by incising and draining the pyosalpinx through an incision in the posterior cul-de-sac, and there is no doubt that this is the most suitable treatment. This is by no means a new operation, and probably many cases of pelvic abscess evacuated per vaginam have been instances of pyosalpinx in which the pus sac has become attached to the vaginal wall. Vaginal incision has, however, usually been reserved for cases in which the swelling was situated low down in Douglas' pouch and obviously adherent to the roof of the vagina, and it has not been considered advisable to operate in this way on pus sacs lying high up in the pelvis.

The two cases in which I have performed this operation were instances of acute pelvic inflammation of recent origin, in which the condition of the patient at the time of operation was exceedingly grave. In Case 1, after incising and draining a right

pyosalpinx, it was necessary a week later to open the wound and drain the left tube. In Case 2 the pyosalpinx was very large, containing eight ounces of pus, and was unilateral. It is interesting to note that the pus in each instance contained virulent micro-organisms. In Case 1 streptococcus pyogenes and staphylococci; in Case 2 bacillus pyocyaneus in pure culture. The result in each case was entirely satisfactory. The patients had immediate relief to the symptoms, and made a perfect recovery.

The treatment of pyosalpinx by vaginal incision and drainage, in place of complete removal of the tube and ovary, is an operation which is still upon its trial, and further observations are needed, more especially with regard to the permanent results. It is most likely to be satisfactory in acute cases, when it is necessary to operate for urgent symptoms. In the chronic cases, often of tubo-ovarian abscess, with numerous foci of pus in the ovary, it is hardly likely to be so successful, although good results have been recorded. The exact condition of the tubes is often very difficult or even impossible to ascertain during an acute attack. Sometimes it is found, on opening the posterior cul-de-sac, that an intraperitoneal abscess is alone present. Thus in one case I found, on exposing the cul-de-sac, a retro-uterine abscess containing four ounces of pus. The tubes and ovaries, though covered with purulent lymph, were not obviously enlarged. The abscess cavity was gently flushed and a drainage tube inserted. The patient made a rapid and complete recovery. I believe, then, that in vaginal incision followed by drainage we have a valuable method of treating acute cases of pyosalpinx, and that in many cases this procedure will be followed by complete cure. Immediate relief is always afforded, and if recovery is incomplete a further operation may be undertaken later when the case has become chronic.

With regard to the technique of the operation, the essential points appear to me to be as follows:—(1) The incision in the posterior cul-de-sac must be free enough to admit two or three fingers and to allow a careful examination of the swelling. In a certain number of cases the vaginal incision is immediately followed by the escape of serous or purulent fluid. It is essential, however, to examine further the condition of the Fallopian tube, which in most of these cases contains pus. (2) A free opening must be made in the distended tube. This may be done by passing a pair of forceps into the sac, and then enlarging the opening with the fingers or scissors. (3) A finger should be passed into the pus cavity, and any septa gently broken down. (4) A large-sized drainage tube should be inserted, or, better still, two tubes, which may be sewn together at the end, thus allowing fluid to be injected without any risk

of over-distending or rupturing the sac. (5) It is probably wise to syringe out the cavity daily with some non-irritating fluid. (6) The tube should be retained until the discharge has become very slight or ceased altogether.—*Medical Chronicle, September*, 1898.

129.—A PLEA IN DEFENCE OF PESSARIES.

By Alexander Duke, F.R.C.P.I., Cheltenham.

It appears to be the fashion nowadays (judging by recent medical literature) to decry the pessary and both advise, and resort to, more heroic methods of treatment. The comparative immunity from risk supposed to be assured by the employment of aseptic or anti-septic measures has certainly contributed to the modern craze for operations, and this even in cases where the wearing of a properly fitted pessary combined with suitable general treatment, would have met the case and in time effected a cure! I can quite understand it being a much easier matter with many to operate rather than endeavour to adjust a pessary, which bears out what Dr. Emmet truly observed in his valuable work on Gynæcology (published nearly ten years ago, and is equally suitable to the present time). "From some members of the profession the opposition to the use of pessaries is as denunciatory as if they were condemning a species of malpractice. This opposition may be sincere, but it is conclusive evidence of their ignorance."

I have myself met with several cases where on examination I have found most unsuitably shaped pessaries adjusted, affording no support whatever to the flexion, and a source of annoyance in addition. In one case, when making examination for cause of irritable bladder, I discovered a Hodge's pessary in the rectum of the patient; which on being removed proved to be the source of all the reflex symptoms. The patient was a country woman, and she was quite unconscious of the presence of the pessary, which must have been inserted in mistake by the country practitioner previously attending her. Such patients have told me the womb has been replaced, and have been assured it was only a question of time till a cure was effected. Is it any wonder then that the pessary is blamed, when the real fault lay with the practitioner? I have also met with patients who, from the great discomfort entailed by a badly-fitting pessary or hurry to get well at once, and also the ill-judged advice of so-called friends, have firmly refused to wear an instrument and foolishly submitted to a severe operation on the mere chance, at best, of obtaining a quick and permanent cure. Surely it were better for a patient to wear

a properly adjusted instrument (for months, if need be) than run the risk of her life, and have her womb fastened to the abdominal wall (when it was evidently intended by nature to be movable), and, in addition, imprisoning the bladder in a confined area. I freely admit that the main objection to the use of pessaries is the difficulty of properly adjusting same to the patient's comfort, and the cure of the misplacement, and also the considerable time occupied in endeavouring to obtain a permanent cure. Indeed, the statement is on record that some German gynæcologist remarked to another, "He would rather perform the most difficult gynæcological operation than attempt to fit a pessary," so that Emmet may well say, "The practitioner, to become an expert in fitting a pessary *that can do no harm* (italics mine) *must* have a decided mechanical talent." How few gynæcologists (comparatively) possess this talent is proved by the injuries found after use of ill-adjusted instruments of whatever shape or material chosen, explaining the rooted dislike of some patients, when a pessary is mentioned, to wear one, their previous experience or the conversation of others making them chary of experiment. I am persuaded that operations for fixing the uterus are many times performed, when a well-adjusted pessary, combined with "tincture of time," would have, in all probability, effected a cure. The patient, who obtains relief from a well-fitted instrument, is not likely to expose herself to the risk and expense of a cutting operation, which operation, I may add, even when performed by skilful hands, does not always end in certain cure, nor leave the important pelvic organs in the position wisely chosen by nature.

130.—VAGINAL SECTION.

By Archibald Donald, M.A., M.D., C.M.,
Obstetric Physician, Manchester Royal Infirmary, &c.

[From Dr. Donald's paper:]

The advantages of the operation as compared with abdominal section may be summarised as follows:—(1) *Absence of Shock.*—This is particularly important in cases in which the patient's resisting power is enfeebled by old age and general ill-health, such as heart disease, chronic alcoholism, &c.; by profuse hemorrhage, as in rupture of tubal pregnancy; or by septic peritonitis. In such cases abdominal section may be attended with great risk, but vaginal section in itself involves hardly any danger.

(2) *The Risk of Septic Peritonitis is Less.*—This will not be readily conceded by some, but clinical evidence abundantly proves it. Death from septic infection after vaginal section or vaginal hysterectomy is a rare event. Even the intestinal paralysis which sometimes follows abdominal section is hardly ever observed after vaginal operation. This is probably due to the fact that there is no shock, little injury to the peritoneum, and that there is rarely any handling of bowel. In a large number of cases the intestines are never seen. Further, in dealing with pelvic abscess there is much less likelihood of the pus being dispersed in the general peritoneal cavity.

(3) *Quicker Recovery and Less Troublesome Convalescence.*—In favourable cases the patient, after recovering from the anæsthetic, has no more pain or discomfort than if the operation had been of the most trifling character. As a rule, there is no trouble with flatulent distension of the bowels. The temperature rarely exceeds 100°, and the pulse is generally under 100. The vaginal incision soon closes up, even when a gauze drain has been used. Most of my hospital cases were quite ready to go home a fortnight after operation, and one case of vaginal ovariotomy, in which a large dermoid tumour was removed, was discharged quite well on the twelfth day. Another patient was sent home eleven days after vaginal ovariotomy.

(4) *Avoidance of Abdominal Scar.*—This is an important fact in all cases in view of the possibility of ventral hernia. It is still more important in women who have to earn their living by hard physical work. In young unmarried women it is a great advantage, from an æsthetic point of view, if we can remove an ovarian tumour without leaving a cicatrix in the abdominal wall.

(5) *More Perfect Drainage.*—Any free fluid in the abdominal cavity at once escapes if an opening is made into the pouch of Douglas. A strip of gauze introduced into the pouch of Douglas from the vagina is the most satisfactory method of draining the peritoneal cavity.

(6) *Better Control of Oozing of Blood from Pelvic Cellular Tissue or Peritoneum.*—It is sometimes necessary in cases of abdominal section to pack the pelvic cavity with gauze in order to control a general oozing of blood from a raw surface. In these cases the gauze has to be brought out of the abdominal incision, and necessarily lies in close contact with coils of intestine. Its removal is accompanied by great pain, and it is difficult to repack if that is found necessary. From the vagina a strip of gauze can be packed against any tissue that is likely to bleed. It may be left for three or four days, and then is comparatively easily removed, and fresh gauze may with little trouble be introduced.

(7) *Simplicity of Procedure in some Cases.*—In this connection we may again draw attention to the ease with which the uterine appendages may be explored without change of position after curetting in cases of chronic inflammatory mischief. The removal of retro-uterine ovarian cysts which are pediculated and non-adherent through the posterior fornix is a very simple matter.

The objection which is most frequently stated is that the operation is technically a very difficult one. That it may be so is undoubtedly true, but it is only in some cases that serious difficulty is encountered. Other cases are exceedingly simple, and some of the difficulties which are met with in one's earlier operations disappear after further experience. The great difficulty is encountered in cases of long, narrow, and rigid vaginæ. In elderly women, with marked senile contraction of the vagina, in young unmarried or nulliparous women, and in women with cicatricial contraction as the result of injuries to the vagina, the technical difficulties may be very great. If the uterus can be pulled down the difficulty may be surmounted; but if in a case, such as any of those just mentioned, the uterus is fixed by adhesions, then it is better not to attempt vaginal section. Adhesions alone do not necessarily make the operation difficult if the vaginal vault is fairly easy of access. The fact that we are obliged to separate an adherent pyosalpinx by the sense of touch alone is often advanced as an objection to vaginal section. We are told that we cannot see what we are doing. But in how many cases of pyosalpinx operated on by abdominal section does the operator see what he is doing until the tube is freed and brought up to the abdominal incision? It may be urged that the vaginal cicatrix may cause trouble in subsequent labours. As far as I know, there has been no case of this kind reported. Cicatricial tissue in vaginal mucous membrane after vaginal section rarely gives rise to tense bands, and is nearly always difficult to find a few months after operation. It has been said that posterior section is liable to be followed by prolapse of the uterus if the utero-sacral ligaments are injured. This statement seems to be founded on theory and not on fact. My own cases have been operated on within too recent a date to allow us to draw conclusions as to the freedom of the operation from disagreeable after-effects, but in about a dozen of them two years or more have elapsed, and there have been no indications of weakening of the pelvic floor. The escape of pus into the peritoneal cavity may occur during attempts to extract a tubal or ovarian abscess. This danger undoubtedly exists, but in less degree than in abdominal section. The rupture generally occurs at the lowest part of the abscess, and the pus escapes straight into the vagina. If there seems to be danger of

rupture of a tumour which may contain pus, it is best to puncture or incise it as soon as it is exposed to view. A distinct contra-indication to the operation exists in cases where there is a possibility of the tumour being malignant. There is risk then of perforation of intestines, of profuse bleeding, and of dissemination of the cancerous masses in the peritoneal cavity. Even where the exudation is inflammatory, if there is reason to believe that the intestines are much involved, as when the exudation is in front of the uterus, great care should be taken in separating adhesions.

The dangers of the operation are as follows:—Hemorrhage is not a serious danger if care be taken not to close the vaginal incision, unless we are sure that there is no injury to an artery or free oozing from raw surfaces. If we have reason to suspect that there is arterial bleeding, the uterus must be pulled down, and the anterior and posterior edges of the peritoneum caught in forceps and pulled down, so that we can obtain a good view of the tissues which have injured. In this way, and by the aid of pressure forceps, we shall generally manage to find and control the bleeding vessel. In the case of free general oozing it is sufficient to pack a thick strand of gauze against the raw surface. Septic peritonitis from general causes is rare if precautions are taken. The real danger from sepsis occurs in cases in which an abscess has been ruptured by the finger and its contents allowed to escape into the general peritoneal cavity. A similar risk attends the breaking-up of old inflammatory tissue or a mass of malignant growth. Acute peritonitis may be caused by the use of too much force in the separation of firm adhesions, leading to extensive bruising of peritoneum. It may also be set up by the entrance of chemical disinfectants into the peritoneal cavity. Injury to intestines is most liable to happen when a coil of bowel is mixed up in a mass of inflammatory exudation or malignant growth. The rectum, bladder, and ureters are not liable to be injured if care be taken. There was only one case of an injury of this kind in my list. In that case the rectum was opened instead of the pouch of Douglas, but it was stitched up and no harm resulted.

Technique.—The steps of the operation are so well known that it is not necessary to discuss them here. Two points, however, call for notice:—(1) The choice of anterior or posterior incision; (2) the question of drainage. (1) Generally speaking, I believe that the anterior incision is to be preferred in cases of chronic thickening and adhesion of the appendages, in broad ligament cysts, in pelvic cellulitis, in fibroid tumours of the uterus, and in exploratory incision generally. Posterior incision is most applicable in pyosalpinx and ovarian abscess lying behind the uterus, in hæmatocele and ectopic pregnancy, and in most cases

of vaginal ovariotomy. (2) Drainage in vaginal section is always best procured by iodoform gauze. The indications for drainage are the same as in abdominal section. It should be the rule in all cases of incision into hæmatocele and pelvic abscess, in exploratory incision in cases of acute and sub-acute peritonitis, and in all cases where there is oozing from raw surfaces after the removal of a diseased tube or ovary. The most careful disinfection of the vulva and vagina must be undertaken immediately before the operation, but after the peritoneum has been divided care must be taken only to use boiled water or saline solution in the douche. In conclusion, I do not wish to be understood as advocating vaginal section for pelvic diseases indiscriminately and to the exclusion of abdominal section. But I believe we have in the vaginal operation an excellent method of treating many of these diseases, and that its introduction marks a great advance in pelvic surgery. Each case must be judged on its own merits. Sometimes vaginal section will give the best results, sometimes abdominal section; and possibly in some cases a combination of the two methods will prove to be best.—*British Medical Journal*, *September* 17, 1898.

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